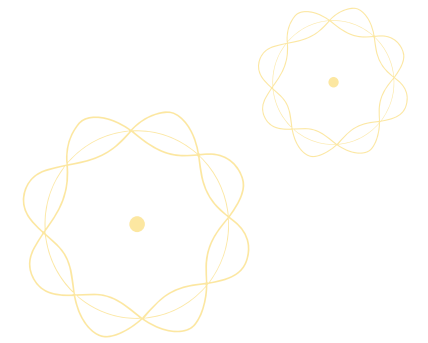


“Genius is one percent inspiration and ninety-nine percent perspiration.”

- *Thomas Alva Edison*



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UNITED
Model Practice Questions-2082
Grade XI Science



United New-Model Questions

(According to New Syllabus of NEB)

**Faculty of Science
Grade XI**



United Academy

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Preface

It is our great pleasure to publish “**United New- Model Questions**” of Class XI. These model questions are strictly based on the guidance of NEB. Since the syllabus of Class XI has been introduced in 2020, there are scarcities of NEB questions for students. This book will fulfill the desire of students to practice and familiarize themselves with NEB pattern questions. We will be adding other sets of new model questions regularly for our students to practice more.

United Academy (UA) sincerely believes in the saying “practice makes a man perfect.” This book is the means to provide a regular mental exercise for our students. The practice of such questions has ensured the high success rate of the Unitedians. Students are required to prepare the best possible answers to the given questions for which they may seek help from their respective subject teachers. Students get to know their stand and find ways to make further improvements when getting their work corrected and receiving necessary feedbacks from the subject teachers. Moreover, we are sure our students will reap great benefits, including the opportunity to practice the model questions for each type of examination in advance. One of our purpose to publish this collection is to enable our students to face the challenge of exams with confidence in order for our students to acquire a habit of excelling in every sphere of their life.

We hope that this collection of questions will fulfill the needs of our students and sharpen their academic skills at the same time. We take this opportunity to extend our sincere thanks to the entire teaching faculty for their consistent effort and zeal. The academic achievement of the college would not have been possible without them. We are also thankful to all the teachers and staff involved in the publication of this “Question Bank.”

Administrative Department

Kumaripati, Lalitpur

September, 2025

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First Term Exam – I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to answer in their own words as far as practicable.

Attempt All Questions.

1. Read the following text and answer the questions given below:

The story begins in the lonely yet tranquil lands outside the village of Serowe, where people journey to grow crops each year. The Edenic setting suggests mythic lushness and abundance. In 1958, however, a seven-year drought begins, and the once-idyllic land grows dry and barren. Initially, the people respond with humor, but during the seventh year, after two years of starvation, many succumb to despair. Some of the men hang themselves. The only people who prosper are those “charlatans, incanters, and witch-doctors” who make their fortunes off of others’ misery and desperation.

The seventh year, in early November, brings an early meager rain that promises an end to the drought, and the season for plowing and preparing the land to grow crops is officially announced at the kglota, or village center. In earnest anticipation, the family of the old man, Mokgobja, which includes a father, mother, unmarried sister, and two small girls, journey to the lands outside the village and clear the field of thorn bush, create hedges around it, dig their well, and plow the field with oxen.

The earth comes alive and sings with insects. Without warning, the rain clouds depart by mid-November, leaving the sun to soak up the last bits of moisture in the air. The earth dries, and the only remaining goat stops giving milk; the family waits in despair, unable to plant the seeds that will nourish them. Only the two small girls, Neo and Boseyong, are content as they play together with dolls, imitating their mother’s chastisements and hitting their dolls.

Mindful only of their plight, the adults take no notice of the girls’ activities. At their breaking point, Tiro, the girls’ mother, and Nesta, the unmarried sister, commence a nightly wailing that begins as a “low, mournful note” and ends as a “frenzy,” while stamping their feet and shouting. As a result, the men find it impossible to maintain their own equilibrium. The old man, Mokgobja, remembers an ancient tribal ritual, buried beneath years of Christian training, of sacrificing children to a rain god to ensure that crops will grow, and he consults Ramadi, the father of the girls, about it. Gradually, Mokgobja becomes more and more convinced of the authenticity of his recollection, and the idea is communicated to the women, then executed by the men.

A. Choose the correct closest meaning of the underlined word: [5 × 1 = 5]

- a. After their father’s demise, I went to visit the mournful family
i. sorrowful ii. pleasant iii. rejoicing iv. exuberant
- b. Everything was available in abundance.
i. scarcely ii. plenty iii. hardly iv. profoundly
- c. The program will commence soon.
i. close ii. inaugurate iii. start iv. venture
- d. I love to spend my leisure time on the tranquil meadows.
i. quite ii. noiseless iii. solitary iv. peaceful
- e. I was in great despair after I lost my precious watch.
i. misery ii. desolate iii. excitement iv. joyfulness

B. Fill in the blanks with a correct word from the passage: [5 × 1 = 5]

- a. The grass meadow looked beautiful because of its
- b. The land has becomebecause of the excessive use of fertilizers.
- c. The country suffered from severedue to the lack of rain for many years.
- d. Theof the refugees in the war zone was unimaginable.
- e. Theof her story is beyond doubt.

C. Answer the following questions: [5 × 1 = 5]

- i. Why did the villagers suffer from starvation? ii. How long did the rain last?

still has no intention of killing the elephant. He states that he merely wants to defend himself. With the rifle, he's led down to the paddy fields where he sees the giant elephant peacefully grazing.

Upon laying eyes on the elephant he instantly feels that it would be wrong to kill it. He has no inclination to destroy something so complex and beautiful. He describes the beauty and great value of the animal. It would go against everything in him to kill it. He says it would be like murder. But when looks back to see the people watching, he realizes that the crowd is massive—at least two thousand people!

He feels their eyes on him, and their great expectations of his role. They want to see the spectacle. But more importantly, he feels, they expect him to uphold the performance of power that he is meant to represent as an officer of the British Empire. At this stage Orwell has the clear revelation that all white men in the colonized world are presented to the people whom they colonize. If he falters, he will let down the guise of power, but most of all, he will create an opportunity for the people to laugh. Nothing terrifies him more than the prospect of humiliation by the Burmese crowd. Now, the prospect of being trampled by the elephant no longer scares him because it would risk death. The worst part of that prospect would rather be that the crowd would laugh. In this way, he realizes that the entire enterprise of the empire is kept afloat by the personal fear of humiliation of individual officers.

Questions:

A. Choose the correct closest meaning of the underlined word: **(5×1=5)**

- a. Conflicting emotions manifest on his face. The word 'manifest' means:
i. secret ii. look iii. understand iv. noticeable
- b. The elephant is rampaging through the bazaar. Here 'rampaging' means:
i. rush wildly ii. walk silently iii. stay quietly iv. pass gently
- c. The elephant was causing wreaking havoc. What does 'havoc' mean?
i. destruction ii. protection iii. disruption iv. confinement
- d. The narrator had noof killing the elephant.
i. interest ii. intention iii. instruction iv. inclination
- e. He was frightened of the massive crowd. What does 'massive' mean?
i. little ii. enormous iii. mounting iv. increasing

B. Complete the following sentences in NOT MORE THAN FOUR WORDS. **(5×1=5)**

- a. I do not prefer to live in a
- b. Waste materials are collected in a
- c. I believe the government willfor work for the unemployed.
- d. I saw the elephantin the paddy field.
- e. The huge tankand easily destroyed them.

C. Answer the following questions. **[5×1=5]**

- a. Why did the elephant begin to destroy everything?
- b. What are some of the things destroyed by the elephant?
- c. Why does the narrator say killing the elephant 'would be like murder'?
- d. Why did the crowd have great expectations form the speaker?
- e. What was the narrator's greatest fear?

2. Answer the questions briefly. **(5×2=10)**

- a. Why has the speaker come to the earth? (*Corona Says*)
- b. What did the giant hear when he was lying awake in bed? (*The Selfish Giant*)
- c. Where did the narrator and his servant make a forcible entrance? (*The Oval Portrait*)
- d. What are benefits of sharing oral tradition? (*Sharing Tradition*)
- e. What happened when Steve Jobs turned thirty? (*How to Live before You Die*)

3. **Answer the questions in detail.** (2×5=10)
- Interpret the symbols for the following: *the children, the seasons, the corner of the garden, the tree and the Frost*, and explain the personification used in the story.(The Selfish Giant)
 - What are the four major problems developed by Lapena with regard to maintaining in the oral fraction? Explain.
4. **Write an email to your foreign friend describing the rules and regulations of your school.** [7]
5. **Can a person make a difference in the society? Describe a person who has made a difference in your society.** [8]
6. **Write an essay on 'The Impacts of Science and Technology on Human Life.'** [10]
7. **Do as indicated in the brackets and rewrite the sentences.** [10×1 = 10]
- terms, termite, terror, team (arrange the words in *alphabetical order*.)
 - Every man, woman and child (*was/were*) given a gift.
 - What is theof this word? (*use the correct form of 'pronounce'*)
 - I went to watch the film. I liked it.(you /enjoy) it? (*Complete the sentence with correct form of the verb*)
 - Make sentences with the homograph '*present*' as *verb* and *noun*.
 - Why did you the cap away? (*Complete the sentence with correct form of the verb 'throw'*)
 - He became a boatman. (*identify the verb and write it as transitive/intransitive/linking verb*)
 - The phone is singing. I answer it. (*will/ am going to*)
 - Alas, she is dead. (*Write the word classes of underlined words.*)
 - Did you enjoy the film? (*Put 'both' in the correct place.*)
8. **Do as instructed.** (5×1=5)
- Did you give him any (advice/advise) for his career? (Choose the correct word.)
 - Grammar rules frustrate me. They are very (*write the correct form of 'frustrate'*)
 - What does 'an unreadable hand -writing' mean?
 - babble
 - squiggle
 - unintelligible
 - lousy
 - He ranthe tunnel. (*write a suitable preposition*)
 - Make a sentence with the prepositional verb '*charge with*'.

First Term Exam – III

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to answer in their own words as far as practicable.

Attempt all questions.

1. Read the text and do the tasks.

Artificial Intelligence (AI) research is heavily focused on improving machine learning models, especially deep learning architectures. One area of interest is model efficiency. Modern AI models often require enormous computational resources and energy, leading researchers to explore ways to reduce their size without compromising accuracy. Techniques like pruning, quantization, and knowledge distillation help achieve this by simplifying models after they have been trained.

As AI systems become more integrated into critical decision-making processes, ensuring transparency and interpretability has become crucial. Explainable AI is an active research area aiming to make complex models like neural networks more understandable to humans. By providing insights into how decisions are made, Explainable AI helps build trust in AI systems, especially in sensitive sectors like healthcare, law, and finance. Another recent trend in AI research is Reinforcement Learning, which enables machines to learn by interacting with their environment and receiving feedback through rewards and penalties. Applications range from autonomous driving to robotics and strategy games. Reinforcement learning is also critical in AI systems that require continuous learning in dynamic environments. Similarly Natural Language Processing (NLP) research has made great strides, but challenges remain, such as understanding context, sarcasm, and nuances in human language. Researchers are working on improving models to handle these complexities and reduce biases that

arise from training on real-world datasets, which often contain biased language and perspectives. Likewise, there is an evolving research trend in AI Ethics and Bias. As AI systems become more pervasive, addressing ethical concerns is critical. AI models trained on biased data can produce discriminatory outcomes, exacerbating social inequalities. Research in AI ethics seeks to mitigate bias, ensure fairness, and establish regulations that promote the responsible use of AI. Transparency in data collection, algorithm design, and implementation is vital for ensuring that AI systems act in the best interest of society.

Despite significant advances, AI research still faces considerable challenges. Current AI systems are highly specialized, excelling at narrow tasks but struggling to generalize knowledge across domains. This inability to perform well in diverse settings is a significant barrier in achieving "Artificial General Intelligence" (AGI)—a system that can understand, learn, and apply intelligence across a wide variety of tasks, much like humans do. AI models often require large datasets to learn effectively, but gathering and labeling such data is resource-intensive and time-consuming. Moreover, models trained on limited or biased datasets may fail when deployed in real-world settings, leading to issues like biased predictions or poor generalization. The societal implications of AI are profound, from job displacement due to automation to privacy concerns over data use in AI systems. Addressing these concerns requires interdisciplinary collaboration between technologists, policymakers, ethicists, and other stakeholders to create AI systems that benefit society as a whole. As AI systems become more prevalent, they also become targets for adversarial attacks. Researchers are exploring ways to make AI systems more robust and secure against malicious inputs designed to deceive or exploit them.

- A. Fill in the blanks with an appropriate word from the passage above. [5]**
- Modern AI models often require enormous computational resources and energy, leading researchers to explore ways to reduce their size without compromising _____.
 - Explainable AI helps build trust in AI systems, especially in sensitive sectors like _____, law, and finance.
 - AI models trained on biased data can produce _____ outcomes, exacerbating social inequalities.
 - The societal implications of AI are profound, from job displacement due to automation to _____ concerns over data use in AI systems.
 - Researchers are exploring ways to make AI systems more robust and secure against _____ inputs designed to deceive or exploit them.
- B. Read the definition and surmise the right word from the anagram given. [5]**
- A technique where a larger, complex model is used to train a smaller, simpler model. [iillitnoads]
 - Subtle differences or distinctions in meaning, expression, or tone. [uncesan]
 - To make something less severe, serious, or harmful. [ttiingea]
 - A collection of data, often used for training and testing machine learning models. [ssttaaed]
 - Strong and able to withstand or overcome adverse conditions. [outbrs]
- C. Answer the following questions. [5]**
- What are some techniques used to improve the efficiency of modern AI models?
 - Why is Explainable AI important, especially in sectors like healthcare and finance?
 - How does Reinforcement Learning contribute to AI's ability to adapt in dynamic environments?
 - How does the lack of large, labeled datasets affect the development of AI models?
 - What measures are being explored to make AI systems more secure against adversarial attacks?
- 2. Answer the following questions in short. [5×2 =10]**
- What do you think spring season never came to the giant's garden? [*The Selfish Giant*]
 - What positive changes have occurred on Earth after the speaker's visit? [*Corona Says*]
OR, What is hyperbole? Explain its purpose in the poem with an example. [*A Red, Red Rose*]
 - What is the difference between oral and literary tradition? [*Sharing Tradition*]
 - Is death really life's greatest invention? [*How to Live before you Die*]
 - Where did the narrator and his servant make a forcible entrance? Why? [*The Oval Portrait*]
- 3. Give answer in required length. [2x5 =10]**
- Discuss the story, "The Oval Portrait", as a frame narrative.
 - What does the slogan "Stay hungry: Stay foolish" mean to you? [*How to Live before you Die*]
OR, Write a proper summary of the play, "A Sunny Morning"

4. Suppose you are to set up a new business but don't have enough money. Write an email to a friend asking him for some money and explain the reason in a paragraph and the way you will return the money. [7]
5. Recall your school days. Write in five paragraphs of an event that you remember. [8]
6. What is cyber bullying? What are its effects? How can it be controlled? Write an essay reflecting over the given questions with some real-life examples. You must give it a title. [10]
7. Do as instructed in brackets. [10]
- Hi! My name is Suntali. Write the word class of underlined term)
 - He is fitting (automatic/ automatically) door in his house. (choose the right option)
 - Have you been to Janakpur? (insert "ever" in appropriate place)
 - Pradip watches hardly ever television. (put underlined adverb in correct place)
 - The river runs the woods . (through/ into/ towards)
 - Ganesh almost fell the river. (use correct preposition)
 - I apply for a job last week. (use correct tense of the verb)
 - A: Are you busy this evening. B: Yes, I to visit my aunt. (will go/ am going to)
 - Perhaps, she pass the exam. (will/ is going to)
 - Scissors is used to have our hair cut. (correct the sentence if needed)
8. Do as instructed. [5]
- Write an opposite for the word, "forgiveness"
 - Make a sensible sentence using the word, "coherent"
 - The word, "convicted" is best understood as:
 - with a conviction,
 - found guilty,
 - under custody
 - Use the homograph, "present" as a noun and as a verb in separate sentences.
 - Certain things frighten me, but I never get when I speak to my teacher. (Use correct form of the underlined term to fill up the gap)

First Term Exam – IV

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to answer in their own words as far as practicable.

Attempt all the questions.

1. Read the text and do the tasks.

Management is a critical component of any organization, playing a pivotal role in shaping its success or failure. The ability to manage people, resources, and processes effectively is essential for leaders and managers in all industries. Management skills are not only about maintaining operational efficiency but also about fostering innovation, motivating teams, and navigating the complexities of the modern workplace. There are various management skills that professionals must develop to thrive in leadership roles, and these can be broadly categorized into technical, interpersonal, and conceptual skills.

Technical skills refer to the specialized knowledge and expertise required to perform specific tasks. These skills are more prevalent in lower-level management, where leaders must often possess hands-on capabilities related to the organization's core operations. For example, a manager in a software development company should have a deep understanding of coding languages, while a production manager in a manufacturing plant needs to understand machinery and production processes. Having technical expertise allows managers to communicate effectively with their teams, understand the work being done, and provide guidance when necessary. However, as managers climb the corporate

ladder, they may rely less on their technical skills and more on their ability to lead teams and manage resources effectively.

Interpersonal skills, are perhaps the most critical for effective management. These skills refer to the ability to communicate, motivate, and build relationships with employees, colleagues, and stakeholders. Effective communication is fundamental for any manager. This includes not only giving clear instructions but also listening actively to the concerns, suggestions, and feedback of employees. Motivating employees is another essential aspect of management. A successful manager knows how to inspire a team to work towards common goals. This involves understanding individual employees' strengths, weaknesses, and motivators. While some employees may be driven by recognition and praise, others might be motivated by opportunities for professional growth or financial incentives. Managers who understand these dynamics can create an environment where employees feel valued and motivated to contribute their best efforts. Building and nurturing strong teams is another critical aspect of interpersonal management skills. Managers must ensure that their teams work cohesively, leveraging the strengths of each member while minimizing conflicts and inefficiencies. Effective team-building involves creating an inclusive environment where diversity of thought and collaboration are encouraged.

Conceptual skills refer to a manager's ability to understand complex situations and devise strategic solutions. Strategic thinking involves understanding the long-term goals of the organization and aligning day-to-day operations with those objectives. This requires managers to have a deep understanding of their industry, competition, and the broader economic environment. Problem-solving is another critical conceptual skill. Managers must be able to identify problems, analyze the root causes, and develop effective solutions. This often involves weighing the pros and cons of different courses of action and making decisions under pressure. Effective problem-solvers are also flexible, able to adapt their strategies as new information becomes available. Finally, a good manager must be good at decision making. Good decision-making requires managers to gather and analyze relevant information, consider potential outcomes, and make informed choices. It also involves taking responsibility for the results of those decisions, whether positive or negative. These skills are especially important for senior-level managers who must make decisions that impact the entire organization. Conceptual skills involve seeing the big picture, identifying trends, and thinking creatively to solve problems.

- A. Answer the questions. [5]**
- What are the three broad categories of management skills mentioned in the passage?
 - How does having technical expertise benefit a manager in leading a team?
 - What are interpersonal skills, and why are they considered critical for effective management?
 - What factors should a manager consider when making important decisions for an organization?
 - How do conceptual skills help managers "see the big picture" in their decision-making processes?
- B. Fill in the blanks with an appropriate word from the passage above. [5]**
- Building and nurturing strong _____ is a critical aspect of interpersonal management skills.
 - Strategic thinking involves aligning day-to-day operations with long-term _____ of the organization.
 - A good manager must gather and analyze relevant information, consider potential outcomes, and make _____ choices.
 - Conceptual skills are particularly important for senior-level managers who make decisions that impact the entire _____.
 - Managers who understand individual employees' strengths, weaknesses, and _____ can create an environment where employees feel valued and motivated.
- C. Read the definition and surmise the right word from the anagram given. [5]**
- Of crucial importance in relation to the development or success of something. [oaiptvl]
 - encouraging the development or growth of something. [oeigtnrfs]
 - making the most of a resource or opportunity. [oingeelrav]
 - something that is carefully planned or designed to achieve a particular long-term goal.[cgsaeirtt]

- v. working or sticking together in a unified and effective manner. [hcseeyiols]
2. **Answer the following questions in short.** [5×2 =10]
- Why is personification? Explain its purpose with an example? [*The Selfish Giant*]
 - Who, according to the speaker, claim that they are superior to all? [*Corona Says*]
 - What is the importance of oral tradition? [*Sharing Tradition*]
 - What is unusual about Steve's birth? [*How to Live before you Die*]
 - What does the speaker compare his love to? [*Red Red Rose*]
- OR, Describe the portrait the narrator saw in the room? [*An Oval Portrait*]
3. **Give answer in required length.** [2x5 =10]
- What are the four major problems developed by LapPena with regard to maintaining the oral tradition. How are they used to structure the essay? [*Sharing tradition*]
 - Does God punish those who are cruel to children and are very selfish? Explain. (*Selfish Want*)
OR, Why did the lovers hide their identity in the play, "A Sunny Morning"?
4. **Write an email to a friend describing about United Academy and the way you are adjusting into it.** [7]
5. **"Education empowers all". Elaborate the statement in a couple of paragraphs with examples.** [8]
6. **Write an essay arguing over the advantages and disadvantages of social media. Justify your stand with some real life examples. You must give it a title.** [10]
7. **Do as instructed in brackets.** [10]
- Alas! Perhaps, her life could have been saved. (*Write the word class of underlined term*)
 - She looked very(calm/calmly), but I was sure she was feeling very nervous. (*choose the right option*)
 - The weather is bad in November. (*insert "never" in appropriate place*)
 - I never have understood her. (*put underlined adverb in correct place*)
 - The thief jumped a car and drove away. (*off/ into/ out of*)
 - While we were hiking..... the forest, we saw a lion. (*use correct preposition*)
 - The Maya culture had disappeared by the time Europeans first (*arrive*) there. (*use correct tense of the verb*)
 - A: Where are you going this Dashain? B: Not sure yet. May be, I..... Ilam. (*will go to / am going to*)
 - The phone is ringing. I answer it. (*will/ am going to*)
 - Are the news on at five or six? (*correct the sentence if needed*)
8. **Do as instructed.** [5]
- Write an opposite for the word, "innocent"
 - Make a sensible sentence using the word, "squiggle"
 - The word, "amercement" is best understood as:
 - loopholes,
 - monetary penalty,
 - deliberate violation
 - Use the homograph, "contest" as a noun and as a verb in separate sentences.
 - If teachers want to interest students, they must use materials. (*Use correct form of the underlined term to fill up the gap*)

Second Term Exam – I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to answer in their own words as far as practicable.

Attempt all questions.

1. **Read the following passage and answer the questions given.** [15]

Last Sunday, I happened to be a visitor at one of the big churches in the city. I was outside because I had arrived late, which is normal occurrence in this part of the world, and there was a big bar across the entrance to the auditorium. While outside, I **witnessed** an incident which I found moving. One of the members of the congregation who could not sit through the service was a toddler. He was a rather special child about three years old. He was just learning to walk.

That day he was having the time of his life, running up and down the large church premises. The church was by a busy main road and every time he headed towards the gates, he was in danger of being crushed by a passing vehicle. Running alongside the little boy and keeping pace with him was his father. All this while, the father was never **impatient** nor did he shout at the boy to sit still.

This reminded me of another father I came across many years ago. His baby boy, Francis, was born with cleft lip which caused a large split in his face. The defect could be repaired but not until he was older. The parents were counseled and they took the baby home. But their troubles were just beginning. They lived in a house with several other tenants. The other tenants decided to make life unpleasant for the couple. Their persistent teasing and nasty comments nearly drove them away from the house. The rumour went round that the mother had given birth to a baby with a 'half face'. People would gather round the house just to laugh at the child and his parents. Some would call the mother names as she passed by. Things became so unbearable that something had to be done.

"I decided to put him in my taxi and work with him so that his mother would be spared all that trouble", the father said to me, as he recounted this sad story. The child **occupied** space in the car, which could have been taken up by a paying passenger. This certainly affected his daily earnings. Many fathers of children with clefts feel too **embarrassed** to allow them out of the house. Not this man. He would drive round the city with Francis in the front seat. This must have put off many passengers, by the face of little Francis.

Today, Francis is a healthy eighth-year-old. After the repair of the cleft, he has become his father's **scared** pride and joy.

A. Answer the following questions. [5×1=5]

- What incident did the writer find moving?
- State the quality did the two fathers have in common.
- What is the writer's attitude to the two fathers?
- Exactly what picture does the writer paint of Francis's neighbours?
- State two ways in which Francis caused financial loss to the father.

B. Fill in the gaps with correct words from the passage: [5×1=5]

- The stage was small and the..... had only 366 seats.
- Thetried to walk but kept falling down.
- This is private; do not enter.
- I heard a that she's going to resign.
- He has sent the car to the mechanic for a.....

C. Use the highlighted words from the passage in your own sentences. [5×1=5]

2. Answer the following question in brief. [5×2=10]

- What is the difference between oral tradition and literary tradition? (*Sharing Tradition*)
- How does the writer distinguish between heroic age and peaceful age? (*What I Require from the Life*)

OR

What motivated and encouraged the boy to start a new adventure? (*The Wish*)

- Do you think Mr. Wright's death would have been uncovered if Mr. Hale hadn't stopped by the Wrights' home? (*Trifles*)
- Describe the second stage of life based on the poem? (*All the World's Stage*)
- How was Steve Jobs adopted? (*How to Live Before You Die?*)

3. Answer the following question. [2×5=10]

- How is the title 'A Sunny Morning' justifiable?
- Is "The Wish" a story about self-confidence overcoming fear or about greed? Give your arguments. (*The Wish*)

OR

Discuss the spiritual transformation of the character Ivan Dmitrich Aksionov. (*God Sees the Truth but Waits*)

4. Your friend wants to visit Kathmandu valley. Write an e-mail giving your knowledge about Kathmandu Valley. [7]

5. Write a diary entry about visiting an old friend. [8]

6. Write a folktale that you have read or heard. [10]
7. Do as indicated in the bracket and rewrite the sentences. [10×1=10]
- Scissors are/is used to have our hair cut. (*Choose the correct option*)
 - His father looks handsome. (*Underline the verb and write whether it is transitive, intransitive or linking*)
 - You can turn off the radio. I (*not/listen*) to it. (*Put the verb in correct tense form.*)
 - It's a great film. You go and see it. (*Choose between had better or should.*)
 - Hark bought the watch. It was expensive. (*Combine the sentences using despite*)
 - This smartphone takes great photos. I bought it last week. (*Join the pair of sentences with appropriate relative clause.*)
 - You are feeling sick. (*Make a wish*)
 - You have lost your phone. (*Express regret*)
 - Ramila is weak in Mathematics. (*Give a piece of advice*)
 - There is piano in the corner of the room. (*Use a/an/the in the gap*)
8. Do as instructed: [5×1=5]
- Write the *adjectival form* of the given words.
 - Hungry
 - Heavy
 - Use the word 'sober' in your own sentence.
 - Find the *number of syllables* in the following words:
 - Vowel
 - Development
 - Make a sensible sentence using the idiom "zip your lip"
 - Arrange the following words in correct group (/t/, /d/, /ɪd/) according to their pronunciation at the end.
killed missed ended

Second Term Exam – II

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to answer in their own words as far as practicable.

Attempt all questions.

1. Read the following passage and answer the questions given. [15]

Parents are the most important models for growing children; in fact, the first influences on them. First, the parents usually are the earliest human contact the child has in the world around him. They are the most enduring models because of their being present longer than other social agents. In the eyes of the child, parents are by far the most powerful people. They influence the child through **nurturing** him and providing his needs. In a word, his survival almost solely depends on them. **Undoubtedly** then, the child looks up to these prime models for the development of his character. Perhaps this explains some of the traditional sayings which suggest that the child takes after the parents.

Take the expression, "a chip off the old block", for instance, which is often used to confirm the close similarity between the behaviour of the child and his parents'. It stands to reason that the child naturally picks up his traits, whether good or bad, from his parents. Although the child's parents are his earliest and most important models, he is **exposed** to many other potent influences: siblings, television, school, celebrities and so on. The walls of boys' rooms, for example, are often covered with the pictures of their idols. But do children emulate the behaviour of everyone? It is known that they do not imitate all the people they know in equal degrees. It is therefore important to understand the variables that determine the extent to which the child takes up the attributes and behaviour displayed by his models.

Studies have shown that this is not a simple case of imitation. One strong **determinant** is identification with the object of admiration. For instance, if a young girl wishes to be like her father, it is because she loves him. Secondly, she believes that she can do both the great and **admirable** things her father does. On the other hand, the father could have been selected because of his care and generosity in nurturing her.

- A. Answer the following questions:** [5×1=5]
- Give two reasons for the influence which parents have on their children.
 - How does the child demonstrate the influence which his model has on him?
 - How do children see their models?
 - Mention two factors which influence a child to take up aspects of his model's behavior.
 - Supply a suitable title to the above passage.
- B. Fill in the blanks with a correct word from the passage:** [5×1=5]
- The..... mention of the village is in a 16th-century manuscript.
 - She is the youngest of five.....
 - We how will this all end.
 - As a show of respect and....., the queen bowed to the man who saved her life.
 - Someone showingis happy to give time, money, food, or kindness to people in need.
- C. Use the highlighted words from the passage in your own sentence.** [5×1=5]
- 2. Answer the following questions in brief.** [5×2=10]
- What is the danger of not passing on information from generation to generation? (*Sharing Tradition*)
 - Why does the writer want more freedom of speech than most people? (*What I Require from Life*)
- OR
- Why did Makar confess his crime? (*God Sees the Truth but Waits*)
 - How does Mrs. Peters' homesteading experience connect to Mrs. Wright's? (*Trifles*)
 - Why couldn't Don Gonzalo and Dona Laura marry?
(*A Sunny Morning*)
 - Why is the last stage called second childhood?
(*All The World's a Stage*)
- 3. Answer the following question.** [2×5 = 10]
- Jobs contend that you need to love to do what you do in order to be great at it. Do you agree or disagree? Why? (*How to Live Before You Die*)
 - What are the major themes of the play? And also discuss the symbolism used in the play. (*The Trifles*)
- OR
- Summarize the story "the Wish" in about 250 words. (*The Wish*)
- 4. Congratulate your younger sister by email as she has won the first prize in an inter-school debate competition.** [7]
- 5. Write a diary entry about your holiday experiences.** [8]
- 6. Describe a strange dream that you have seen recently.** [10]
- 7. Do as indicated in the bracket and rewrite the sentences.** [10×1=10]
- The man with all his children (*live/ lives*) in the city. (*Choose the best option.*)
 - Amrita (*not/seem*) very happy at the moment. (*Put the verb into the correct form.*)
 - Bhawana drinks milk every day. (*Underline the verb in the sentence and write whether it is transitive, intransitive or linking verb.*)
 - I think you learn English to enroll a university course. (*Choose between had better or should.*)
 - It was raining. We still went to the park. (*Combine the sentences using in spite of*)
 - The person was really helpful. They spoke to him. (*Join the pair of sentences with appropriate relative clause.*)
 - It's cold. (*Make a wish.*)
 - You are lost in a town. (*Express regret.*)
 - Your friend lost his/her pen. (*Give a piece of advice.*)
 - Who is woman in this photograph? (Use *a/an/the* in the gap.)
- 8. Do as indicated:** [5×1=5]
- Write the *adjectival form* of the given words:

- i. greedy ii. noisy
- b. Use the word “**hasten**” in your own sentence
- c. Find the *number of syllables* in the following words.
 - i. examination ii. discipline
- d. Make a sensible sentence using the idiom “**fight tooth and nail**”.
- e. Arrange the following words in correct group (/t/, / d/, /ɪd/) according to their pronunciation at the end.

picked smiled lasted

Second Term Exam – III

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to answer in their own words as far as practicable.

Attempt all questions.

1. Read the following passage and answer the given questions below:

Climate change is profoundly affecting global food production systems, creating both challenges and opportunities. Rising temperatures, unpredictable weather patterns, and extreme events like droughts and floods are reducing agricultural productivity in many regions. According to the Food and Agriculture Organization (FAO), crop yields could decline by up to 25% in some parts of Africa and Asia by 2050 due to these changes. Conversely, certain colder regions, such as parts of Canada and Russia, may experience extended growing seasons, potentially increasing their agricultural output.

The most vulnerable populations are those in developing countries, where food insecurity is already a pressing issue. A report by the Intergovernmental Panel on Climate Change (IPCC) highlights that nearly 820 million people are undernourished worldwide, with climate change exacerbating this problem. For example, rising sea levels and saltwater intrusion threaten rice production in low-lying areas like Bangladesh, a staple food source for millions.

In addition to impacting crops, climate change affects livestock. Heat stress reduces dairy and meat production, while changing rainfall patterns diminish the availability of grazing land and water. According to the International Livestock Research Institute (ILRI), livestock losses due to drought cost African farmers billions annually.

Efforts to adapt to these challenges include innovations in crop breeding, such as developing drought-resistant and heat-tolerant varieties. Similarly, climate-smart agriculture practices like efficient water management and agroforestry are being implemented worldwide. However, these solutions require significant investment and global collaboration.

The relationship between climate change and food security underscores the need for urgent action. Without adequate measures, the combined pressures of a growing population and a warming planet could destabilize food systems globally.

Questions:

A. Choose the best answer.

[5×1 = 5]

- i. Which of the following is implied in the passage about food security in colder regions?
 - a. Colder regions will face more food insecurity.
 - b. Extended growing seasons could benefit agricultural output.
 - c. Colder regions are immune to the effects of climate change.
 - d. Climate change will make colder regions completely uninhabitable.
- ii. Based on the passage, what is the main cause of reduced agricultural productivity in developing countries?
 - a. Increased reliance on imported food
 - b. Poor soil quality and outdated technology
 - c. Extreme weather events like droughts and floods
 - d. Overproduction leading to soil depletion

- iii. Which of the following examples in the passage illustrates how climate change impacts staple foods?
 - a. Livestock losses due to drought in Africa
 - b. Saltwater intrusion threatening rice production in Bangladesh
 - c. Heat stress reducing dairy output globally
 - d. Rising temperatures enabling crop growth in Canada
- iv. What can be inferred about climate-smart agriculture from the passage?
 - a. It focuses exclusively on increasing crop yields.
 - b. It relies heavily on traditional farming methods.
 - c. It involves innovative approaches like water management and agroforestry.
 - d. It is an outdated concept with limited applicability.
- v. Why does the passage suggest significant investment is necessary for tackling food insecurity?
 - a. To expand farmland in developing countries.
 - b. To fund global awareness campaigns.
 - c. To implement advanced agricultural technologies and practices.
 - d. To eliminate livestock farming entirely.

B. Read the text again and write -

TRUE if the statement agrees with the information given in the text.

FALSE if the statement contradicts the information given in the text.

NOT GIVEN if there no information in the text.

[5×1 = 5]

- i. Climate change will reduce crop yields by 50% in all parts of Africa by 2050.
- ii. Developing countries are more vulnerable to food insecurity due to climate change.
- iii. The IPCC report states that saltwater intrusion is the primary cause of undernourishment worldwide.
- iv. Livestock losses due to drought cost billions annually for African farmers.
- v. Agroforestry is currently the only effective climate adaptation strategy in agriculture.

C. Answer the following questions briefly.

[5×1 = 5]

- i. How does climate change affect livestock productivity?
- ii. What percentage of crop yield decline is projected in parts of Africa and Asia by 2050?
- iii. Which agricultural innovation is mentioned as a response to climate change?
- iv. What specific issue threatens rice production in Bangladesh?
- v. Why is global collaboration essential for addressing food insecurity?

2. Answer the following question in brief.

[5 × 2 = 10]

- a. Why did Makar disclose that he had killed the merchant?
(*God Sees the Truth but Waits*)
- b. Why did Jonathan mistrust the officer who wanted to take his bicycle? (*Civil Peace*)
- c. How does the 'November sunset' inspire the speaker?
(*Who are you, little i ?*)
- d. Explain the following lines:
And then the justice,
In fair round belly with good capon lined,
With eyes severe and beard of formal cut,
Full of wise saws and modern instances (*All the World's a Stage*)
- e. How does LaPena establish a relationship between art and oral tradition?" (*Sharing Tradition*)

3. Answer the following questions in detail.

[2×5 = 10]

- a. What does the writer require from life for himself? Why? Explain.
(*What I Require from Life*)
- b. Minnie Wright's act of murder symbolizes her resistance against years of emotional and psychological confinement. Do you agree? Discuss highlighting the differences in how men and women perceive justice.
(*Trifles*)

4. Prepare a 5-minute speech to deliver in your class on the topic 'Impact of following foreign traditions'. [7]

5. Suppose that you are a reporter and you interviewed a person who has worked on environmental protection. Prepare a draft of interview (in question and answer form) of that person incorporating the efforts s/he made to change things and attitudes of people. [8]

6. Write an essay on 'A Glorious Future for Nepal: My Dream and Dedication'. [10]

7. Do as indicated in the brackets and rewrite the sentences: [10×1 = 10]

- a. Shefali always asks questions to her teachers. (*Underline the verb and write whether it is transitive, intransitive or linking verb*)
- b. That man (not/carry) a suitcase so he can't be a passenger.
(*Put the verb in correct form, present simple or present continuous.*)
- c. Sneha says, "I can't control my temper!".
(*Advise her using 'should/ought to'*)
- d. It might rain. You (should/had better) take an umbrella.
(*Choose the correct option.*)
- e. She's in her eighties, but she does all her works herself.
(*Rewrite the sentence using 'however'.*)
- f. That grey thing isn't very traditional. You can see it on the roof there.
(*Join the sentence with appropriate relative clause.*)
- g. You're short of money. (*Make a wish.*)
- h. Don't worry. I (am not going to/won't) tell anyone.
(*Choose the correct answer.*)
- i. He doesn't tell the truth. (*Rewrite the sentence with the adverb 'always' in the appropriate place.*)
- j. If teachers want to interest the students they must use _____ materials. (*Put the correct form of adjective according to the sentence.*)

8. Do as instructed:

[5×1 = 5]

- f. 'Seeking or intended to overthrow an established system' means:
 - i. pursue ii. infiltrate iii. subversive iv. manifest
- g. Categorize the following verbs according to their end pronunciation as /t/, /d/ or /Id/ : laughed, fixed, watched, lasted.
- h. Write the correct spelling of the following words, adding the suffixes given against each root.
 - i. monkey + es ii. Argue + ment
- i. Write the meaning of the idiom 'bury the hatchet'.
- j. Make a sensible sentence using the phrasal verb 'make up'.

Second Term Exam – IV

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to answer in their own words as far as practicable.

Attempt all questions.

1. Read the following passage and answer the given questions below:

Artificial intelligence (AI) is revolutionizing the healthcare sector by enabling faster diagnoses, personalized treatments, and efficient resource management. According to a report by McKinsey & Company, AI has the potential to generate \$150 billion in annual savings for the U.S. healthcare economy by 2026. From advanced imaging techniques to predictive analytics, AI is transforming the way medical professionals identify and treat diseases.

One prominent application of AI is in diagnostic imaging. AI algorithms can analyze medical images, such as X-rays and MRIs, with remarkable accuracy, often detecting conditions like cancer or fractures earlier than traditional methods. For example, a 2022 study published in *Nature Medicine* found that AI systems outperformed radiologists in identifying breast cancer by 9%.

AI is also instrumental in the development of personalized medicine. By analyzing genetic data, AI models can predict a patient's response to specific treatments, helping doctors design therapies tailored to individual needs. In oncology, for instance, AI-powered systems have been used to identify gene mutations linked to drug resistance, guiding the selection of more effective treatments.

Despite its potential, AI faces challenges in healthcare. Data privacy is a significant concern, as AI relies on vast amounts of patient data for training. Regulatory hurdles and the high cost of AI implementation further limit its widespread adoption. Additionally, the potential for algorithmic bias — where AI systems may produce inaccurate or unfair results due to skewed training data — raises ethical questions about its use.

Nonetheless, the integration of AI into healthcare is advancing rapidly. Startups and tech giants are investing heavily in AI research, while hospitals are increasingly adopting AI-powered tools to enhance patient care. The potential of AI to improve healthcare outcomes is immense, but it requires careful regulation, ethical considerations, and collaboration between technologists and medical professionals.

Questions:

- A. Choose the best answer.** (5x1=5)
- i. What is one major advantage of AI in healthcare mentioned in the passage?**
 - a. Reduction of genetic diversity in treatments
 - b. Improved regulatory oversight
 - c. Faster and more accurate disease diagnosis
 - d. Decreased reliance on technology in hospitals
 - ii. Based on the passage, which field has seen AI outperform human professionals?**
 - a. Cardiology
 - b. Oncology
 - c. Diagnostic imaging
 - d. Genetic counseling
 - iii. Why is AI particularly valuable in personalized medicine?**
 - a. It eliminates the need for doctors in prescribing medications.
 - b. It uses genetic data to tailor treatments to individual patients.
 - c. It reduces the cost of developing new drugs.
 - d. It creates uniform treatments for all patients.
 - iv. What does the passage identify as a challenge associated with AI in healthcare?**
 - a. Lack of patient interest in AI applications
 - b. Excessive reliance on traditional medical techniques
 - c. Algorithmic bias and data privacy concerns
 - d. Overabundance of training data for AI systems
 - v. What can be inferred about the adoption of AI in healthcare?**
 - a. It is progressing despite significant financial and ethical challenges.
 - b. It has already solved all major healthcare issues.
 - c. It will likely replace doctors entirely in the near future.
 - d. It is only used in diagnostic imaging.
- B. Read the text again and write**
- TRUE if the statement agrees with the information given in the text.
FALSE if the statement contradicts the information given in the text.
NOT GIVEN if there no information in the text. (5x1=5)
- i. AI can predict patient responses to treatments by analyzing genetic data.
 - ii. AI systems have entirely eliminated the need for radiologists in hospitals.
 - iii. The passage states that AI-generated savings in the healthcare sector will exceed \$200 billion by 2026.
 - iv. Ethical considerations are necessary for integrating AI into healthcare.
 - v. The passage mentions that AI has been fully implemented in all hospitals globally. (5x1=5)
- C. Answer the following questions briefly.** (5x1=5)
- i. What is one example of how AI has improved diagnostic accuracy?
 - ii. What are the two main challenges of AI implementation in healthcare?
 - iii. How does AI contribute to personalized medicine?
 - iv. What financial benefit is AI expected to bring to the U.S. healthcare economy by 2026?
 - v. Why is collaboration important for integrating AI into healthcare?
- 2. Answer the following question in brief.** [5x2=10]
- a. What kind of attitude do you think Jonathan has towards life? (*Civil Peace*)
 - b. Is Shakespeare’s comparison of human’s life with a drama stage apt? How? (*All the World's a Stage*)
 - c. Explain the following lines:
Till a’ the seas gang dry, my dear,
And the rocks melt wi’ the sun!
And I will love thee still, my dear,
While the sands o’ life shall run. (*A Red, Red Rose*)

- d. What lesson of life does Jobs give from his third story? (*How to Live Before You Die*)
- e. What does the writer require for the society? Write in points. (*What I Require from Life*)
3. **Answer the following questions in detail.** [2×5=10]
- a. How does Tolstoy prove in the story that spiritual liberation and inner peace are attainable, even amidst the gravest suffering? (*God Sees the Truth but Waits*)
- b. Briefly describe the symbols present in the play and discuss how these symbols together highlight the themes of the play, showing how Minnie's life of isolation and oppression led to her breaking point. (*Trifles*)
4. **Prepare a 5-minute speech to deliver in your class on the topic "Is social media making us less social?"** [7]
5. **Suppose that you are a reporter and you interviewed a social/cultural activist. Prepare a draft of interview (in question and answer form) of that person incorporating the efforts or contributions s/he made to change things and attitudes of people.** [8]
6. **Write an essay on "The Importance of Life Skills Education in Modern Curriculum".** [10]
7. **Do as indicated in the brackets and rewrite the sentences:** [10×1=10]
- a. I waited for the friend at the café. (*Underline the verb and write whether it is transitive, intransitive or linking verb*)
- b. Prince (not/read) English novels very often. (*Put the verb in correct form, present simple or present continuous.*)
- c. Aditi says, "I have a cold". (*Advise her using 'should/ought to'*)
- d. It might rain. You (should/had better) take an umbrella. (*Choose the correct option.*)
- e. Himani's in her mid-teens, but she depends on her parents for all her works. (*Rewrite the sentence using 'Despite'.*)
- f. Einstein's theories revolutionized the field of physics. Einstein was a brilliant scientist. (*Join the sentence with appropriate relative clause.*)
- g. Your best friend's stopped talking to you. (*Express your regret.*)
- h. I am not free tonight. I (am going to/will) meet my uncle. (*Choose the correct answer.*)
- ii. Raj doesn't get up before 7 a.m. (*Rewrite the sentence with the adverb 'usually' in the appropriate place.*)
- j. Certain stories interest almost everybody. For example, most students are in fairy tales. (*Put the correct form of adjective according to the sentence.*)
8. **Do as instructed:** [5×1=5]
- a. The new passion for learning also led to amazing discoveries in science. (What does the underlined word mean?)
i. enthusiasm ii. emotion iii. logic iv. love
- b. Categorize the following verbs according to their end pronunciation as /s/, /z/ or /ɪz/: pages, roofs, trees, shops.
- c. Write the correct spelling of the following words, adding the suffixes given against each root.
i. fancy + ful ii. write+ ing
- d. Write the meaning of the idiom 'when pigs fly'.
- e. Make a sensible sentence using the phrasal verb 'get away'.

Send - Up Exam – 2079

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to answer in their own words as far as practicable.

Attempt All Questions.

1. Read the following passage and answer the given questions below:

The idea that coffee is bad for heart pops up periodically. It was found that regularly drinking very strong coffee could sharply increase cholesterol levels. Researchers even isolated fatlike chemicals, cafestol and kahweol, responsible for the rise.

It turned out that the European brewing method—boiling water sits on the coffee grounds for several minutes before straining – produces high concentrations of cafestol and kahweol. By contrast, the filter and percolation methods remove all but a trace of these chemicals. Moreover, the studies involved large amounts of coffee—five to six cups a day. Moderate coffee drinkers down only two cups. Research has also shown that regular, moderate coffee drinking does not dangerously raise blood pressure. And studies have failed to substantiate fears that coffee might trigger abnormal heart rhythms (arrhythmias) in healthy people.

“For heart disease, I think the issue is closed,” says Meir Stampfer, an epidemiologist at Harvard who has studied many aspects of coffee and health. “Coffee drinking at reasonable levels is unrelated to heart risk.” Evidence suggests that coffee may help fend off Parkinson’s disease. A 30-year study of 8000 Japanese-American men found that avid coffee drinkers had one-fifth the risk of those who didn’t drink the brew.

Scientists at Massachusetts General Hospital, USA, found indirect evidence that Caffeine- the habit forming stimulant in coffee – may actually combat Parkinson’s disease. The caffeine seemed to protect mice brain cells from depletion of the nerve chemical dopamine – the problem underlying Parkinson’s disease in humans. However, these are preliminary findings; human studies have- not consistently supported caffeine’s protective role.

The studies on coffee and cancer have focused on three organs – and are reassuring. You may remember a brief coffee scare in the early 1980s when a single study linked coffee with pancreatic cancer. A false alarm: Many studies since then have shown that the association is either extremely weak or non-existent. If there’s a connection between coffee and bladder cancer, it possibly applies just to coffee junkies. A reanalysis of ten European studies found an increased risk only among people who drank ten or more cups a day. And studies show that coffee seems to have no adverse influence on the risk of colon cancer.

Caffeine is such a powerful stimulant that the International Olympic Committee and the National Collegiate Athletic Association set limits on how much can remain in the blood during competition. In addition to boosting physical endurance, caffeine increases alertness and improves mood. The buzz may come at a price, though. People who drink more than they’re used to may become restless and unable to sleep. Moreover, it’s possible to become physically dependent on caffeine in days.

The question now arises: how much to drink? Those with heartburn and anxiety may want to see if cutting back coffee improves their condition. For most people, however, there’s virtually no risk in consuming up to three normal cups a day. Harvard’s Stampfer tries to keep his coffee drinking irregular enough to avoid habituation: “That way, I can get a buzz when I feel like it.”

Questions:

A. Choose the most appropriate option: **(5 x 1 = 5)**

- a. Coffee increases.....of those people who regularly drink very strong coffee.
 - i. cholesterol ii. tension iii. the amount of blood iv. fats
- b. A person should not drink coffee.....
 - i. less than 10 cups a day ii. more than ten cups a day
 - iii. more than three cups a day iv. none of the above
- c. It has been proved that coffee does not have any adverse effect on the risk of.....
 - i. colon cancer ii. diabetes iii. lung cancer iv. none of the above
- d. Caffeine boosts
 - i. physical endurance ii. mental endurance iii. positive feelings iv. none of these
- e. Studies reveal that drinking coffee moderately.....
 - i. does not dangerously affect the health ii. dangerously affects the health
 - iii. causes colon cancer iv. causes hypertension

B. Answer the following questions briefly. **(5 x 1 = 5)**

- i. In what respect does coffee harm human heart? How?
- ii. What is the finding of latest researches about coffee and human heart?
- iii. What problem causes Parkinson’s disease? What is the role of coffee in this respect?
- iv. Name the three types of cancer listed in the passage.
- v. ‘Caffeine is a powerful stimulant’. What are the positive and negative effects of Caffeine?

C. Make sentences of the underlined words in the passage.

2. Answer the questions briefly. **(5×2=10)**

- a. How did the giant realize his mistake? (*Selfish Giant*)
- b. Why did Jean commit suicide? (*Two Little soldiers*)

- c. What does the speaker mean when it says '*The earth is not your property alone*'? (*Corona Says*)
 d. How does Parker try to obtain help and what problems does she encounter? (*What Is Poverty?*)
 e. Do you think Mrs. Wright Killed her husband? Give reasons. (*Trifles*)
3. **Answer the questions in detail.** (2×5=10)
 a. Summarize the story 'Civil Peace'. (*Civil Peace*)
 b. How is science the humankind's indispensable guardian and caretaker, according to the writer? (*Scientific Research is a Token of Humankind's Survival*)
4. **Write a couple of paragraphs about an interesting place that you recently visited.** [7]
 5. **Write a letter to the editor of a national newspaper about the garbage management in Kathmandu Valley.** [8]
 6. **Write an essay on the impact of globalization on the process and process of education in Nepal.** [10]
 7. **Do as indicated in the brackets and rewrite the sentences.** (10×1 = 10)
 a. I bought a round table in the supermarket. (*Write the word class of the underlined words*)
 b. A number of friends (love/loves) riding bicycles. (*Choose Correct Option*)
 c. They have a lot of money, but they are still not happy (*Connect the Sentences using 'despite'*)
 d. This smart phone takes great photos. I bought It last week. (Join the sentences with appropriate relative clause)
 e. You live in a crowded city. (*Make a wish using 'I wish/If only ...'*)
 f. I'm sure he's not going to the cinema today. (*Rewrite the sentence using must/can't.*)
 g. You/live in Kathmandu? (*Rewrite the sentence using 'used to' form.*)
 h. I haven't read the text thoroughly, but given a (fast/quick/rapid) glance. (*Choose the correct option.*)
 i. They said, "Hurray! we've won the match." (Change into indirect speech.)
 j. Who told you the story? (*Change into passive voice*)
8. **Do as instructed.** (5×1=5)
 a. Does television (affect/effect) children? (*Choose the correct word*)
 b. Make a sentence using the word 'Sanity'.
 c. Paraphrase the sentence using the verb in the brackets. He's enjoying his new job. (*Pretend*)
 d. The man will buy a pen next week. (*Divide the sentence into different parts.*)
 e. Write the number of syllables in the following words: Children Pronunciation

Send - Up Exam – 2079

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to answer in their own words as far as practicable.

Attempt all the questions:

1. Read the following passage and answer the given questions below:

Many of the underdeveloped countries will promote the growth of their economies in one way or the other, no matter whether they receive substantial outside aid in the process or not. The character of that development, however, is likely to be strongly influenced by the types of and amounts of aid available. The outcome is much more likely to be favourable, from the standpoint of the objectives for successful development set up previously, if there is substantial international aid than if there is not.

By substantial aid I mean not only large amounts of technical assistance but also of capital. Initially, the capacity of an underdeveloped country to use capital productively may be surprisingly small, limited by lack of organization, trained personnel and other social obstacles. At this stage technical assistance is the main need from outside, with comparatively small amounts of capital, much of which may have to be in the form of grants for non-self liquidating projects, in education, health, access to roads in rural areas, and the like, if, at this stage, substantial capital is available from outside to supplement what can be formed internally (and to simulate internal capital formation, for it does that too) the rate of economic growth can be consistently increased, and the strains and frustrations and political risks of the development are likely to be considerably less.

It is possible for underdeveloped economies to modernize themselves with very little capital from outside. Japan imports of capital were small though some of it came at crucial times. The contribution of foreign direct investments to the advancement of technical know-how also was greater than would be indicated merely by the size of the investment. The Soviet Union industrialized its economy with practically no aid from foreign

investment capital except for the foreign owned installations confiscated after the revolution, though it imported machinery in the early days on short term or immediate term credits and hired services of foreign experts. Both Japan and Russia achieved their development in an authoritarian political and social framework. The outcome in both cases from standpoint of the peace in the world and democratic ideals, was highly unfavourable.

In the absence of outside aid, the only way to accumulate capital, is to increase production without taking much of the benefit in more consumption or even while pushing consumption standards down. Where the people are already near the subsistence level this may mean extreme hardship. Somehow the people must be motivated to change their accustomed ways quickly, to work hard and to forgo present consumption so that capital investment can be made.

Questions:

A. Choose the most appropriate option. (5 × 1 = 5)

- a. The passage says that
 - i. without foreign aid no underdeveloped country can grow.
 - ii. underdeveloped country must refrain from taking foreign aid.
 - iii. the economies of the underdeveloped countries are more likely to grow faster with substantial foreign aid than without.
 - iv. underdeveloped countries are economically backward because their governments have not got their priorities right.
- b. Substantial aid in this context means
 - i. technical assistance in the form of trained personnel.
 - ii. capital in the form of bank loans and overdrafts.
 - iii. large amounts of technical assistance and capital.
 - iv. a cheap and plentiful supply of labour.
- c. Which of the following points or statements did the writer actually make?
 - i. Japan and Russia achieved their development in a democratic framework.
 - ii. Japan and Russia achieved their development in an authoritarian political and social framework.
 - iii. Japan and Russia would have developed faster if they had relied on democratic methods.
 - iv. Japan and Russia are still among the underdeveloped countries of the world.
- d. Accumulation of capital without getting outside aid may mean
 - i. extreme hardship ii. more investment
 - iii. high living standard iv. low living standard
- e. The contribution of FDI in case of Japan was
 - i. greater than the technical know-how ii. less than the technical know-how.
 - iii. Equal to the technical know-how. iv. Unequal to the technical know-how.

B. Answer the following questions briefly. (5 × 1 = 5)

- i. How does the availability of substantial capital help?
- ii. How can a nation accumulate capital if it does not get outside aid?
- iii. How did Japan and Russia become developed?
- iv. What problems does an underdeveloped country face?
- v. What should an underdeveloped nation do to minimize risk?

C. Make your own sentences using the underlined words from the passage. (5 x 1 = 5)

2. Answer the following questions briefly. (5 × 2 = 10)

- a. Why was Aksionov imprisoned? (*God Sees the Truth but Waits*)
- b. Do you think that Luc is a betrayer of friendship? (*Two Little Soldiers*)
- c. Explain the purpose of hyperbole in the poem citing any two examples. (*A Red, Red Rose*)
- d. What was the problem that the nuclear powers had faced? (Scientific Research is a Token of Humankind's survival)
- e. What is the final judgement on Wasserkopf's demand of refund? (*Refund*)

3. Answer the following questions in detail. (2 × 5 = 10)

- a. Interpret the poem 'Who are you, little i?' in your own way. (*Who are you, little i?*)
 b. What does the writer require from life? Explain in detail. (What I require from Life)
4. Write a couple of paragraphs on the impact of globalization on the process and progress of education in Nepal. 7
5. Write a letter to the editor of a national newspaper explaining any two serious social problems of Nepal and present some solutions. 8
6. Write an essay on 'Responsive Youths for Peace and Prosperity of the nation'. 10
7. Do as indicated in the brackets and rewrite the sentences. (10 × 1 = 10)
- a. Alas, he is dead. (*Write the word class of the underlined words.*)
 b. The pair of shoes on the floor (is/are) mine. (*Choose the correct option.*)
 c. Playing the stock market is exciting. It can be risky. (*Connect the sentences with 'However'*)
 d. The person was really helpful. They spoke to him. (*Join the sentences with appropriate relative clause*)
 e. You could 't attend your brother's wedding. (*Express regret using 'I wish/If only'*)
 f. I'm sure he has a car. (*Rewrite the sentence using must/can't*)
 g. She/not eat chocolate is childhood but now she loves it. (*Rewrite the sentence using 'used to ' form.*)
 h. They made a horrible decision which caused (hopeless/inflexible irreparable) damage to our company. (*Choose the correct option.*)
 i. He said to me, "Do you like ice-cream?" (*Change into indirect speech.*)
 j. I didn't fix the problem. (*Change into passive voice.*)
8. Do as instructed. (5 × 1 = 5)
- a. Can I (borrow/lend) me your book? (Choose the correct word)
 b. Make a sentence using the word 'hazy'.
 c. Paraphrase the sentence using the word in the brackets.
 Ashika is worried about her exam. (seem)
 d. Bimala is a very beautiful girl. (Divide the sentence into different parts)
 e. Write the plural form of the following words: Formula Oasis

Send - Up Exam – 2080

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to answer in their own words as far as practicable.

Attempt all the questions.

1. Read the following passage and do the activities that follow:

15

The defense mechanism of human body is a gift of nature provided to human beings. The power of our body to fight against various disease-producing agents is known as defensive mechanism. This defensive mechanism depends upon various factors which can be categorized mainly into two types—common factors and special factors.

Amongst the common factors, the most important is the health of human beings. We all know if we are having a good health, our body automatically remains protected against the diseases. For keeping good health, one should have nutritious balanced diet. A balanced diet is that which contains carbohydrates, fat, proteins, vitamins in proportionate amount.

The skin of our body saves us against many micro-organisms producing diseases, provided that it is intact. In case there are cuts or abrasions on it, the micro-organisms penetrate the body through those cuts and abrasions and can cause diseases. Therefore, a cut or an abrasion should never be left open. In case there is no bandage, etc. available, it may be covered by a clean cloth.

Some bacteria are residing on and inside the human body. They are our friends and are useful for us. They do not cause any disease and by their presence they do not allow disease-causing organisms to settle on those places. For example, the micro-organisms, present in human saliva secrete a chemical which does not allow diphtheria causing bacteria to grow inside the oral cavity.

The human body secretes a variety of fluids, which are killers for disease causing microorganisms. For example, gastric juice (acidic in nature) secreted by our intestinal tract kills all organisms which enter our body through food.

There are a few automatic activities of our body known as “reflex phenomenon” which protect the body against many infections. This reflex phenomenon includes sneezing, coughing and vomiting.

Fever is one of the most important constituents of the defensive mechanism of our body. The organ which regulates the temperature of our body is known as hypothalamus and it is situated in the brain. When microorganisms after entering the body release toxic products and these reach the brain through blood, the hypothalamus starts increasing the temperature of body the person gets fever. This fever is very useful for the human body because by the increase of temperature the micro-organisms which are the root cause of the problem get killed.

We are living in an environment which is full of bacteria. Many of these bacteria can produce serious diseases, but all of us do not suffer from such diseases. It is due to a special power present in our body to fight these diseases. A part of this special power of our body is known as innate immunity. This is inherited by us. The other part of this special power is called acquired immunity. This we gain during our lifetime.

In a nutshell, we can say since nature has provided us with defensive mechanism to fight against so many diseases, let us maintain it and rather increase it by the way of immunization.

A. Answer the following questions by choosing the most appropriate option:

- i. One should have nutritious balanced diet because.....
 - (a) it has food items for various tastes
 - (b) it keeps one healthy
 - (c) it is recommended by a dietician
 - (d) it has all essential items
- ii. The defense mechanism of human body is important as.....
 - (a) it protects us from diseases
 - (b) it checks deterioration of body
 - (c) it saves us from depression
 - (d) it builds up the wear and tear
- iii. In order to check the micro-organisms penetration in the human body.....
 - (a) we must cover the whole body
 - (b) we must rub insect repelling oil
 - (c) we must use antiseptic solutions
 - (d) we should keep cuts and abrasions covered
- iv. Gastric juice secreted by our intestinal tract kills all extraneous organisms as.....
 - (a) it flows very fast
 - (b) it is acidic in nature
 - (c) it prevents their multiplication
 - (d) it is a natural stimulant
- v. We can increase our defensive mechanism by.....
 - (a) developing friendly bacteria
 - (b) checking infection through reflex phenomenon
 - (c) seeking proper immunization
 - (d) suppressing fever in initial stages

B. Answer the following questions in brief:

[5×1 =5]

- i. How can micro-organism’s penetration be checked in the human body?
- ii. What is the role of gastric juice in human body?
- iii. How can we increase our defensive mechanism?
- iv. What do you mean by reflex phenomenon? How is it helpful for human body?
- v. Give a suitable title to the above passage and justify it.

C. Find the words from the text that mean the following:

[5×1 =5]

- i. an area damaged by scraping or wearing away
- ii. to produce and release liquid, especially from the cells or body
- iii. a part of a whole
- iv. the area of the brain that controls body temperature.
- v. the action of making a person or animal resistant to a particular infectious disease or pathogen, typically by vaccination.

2. Answer the following question briefly:

[5×2=10]

- a. Why did Dona Laura and Don Gonzalo separate? (A Sunny Morning)

- b. How can science become helpful for humankind's survival, according to the writer? (Scientific Research is a Token of Humankind's Survival)
- c. Why does the writer want socialism in the world? (What I Require from Life?)
- d. Why has the speaker come to the earth? (Corona Says)
- e. What did the Snow and the Frost do to the garden? (The Selfish Giant)
3. **Answer the following question in detail:** (2×5=10)
- a. Explain the five major symbols found in the paly *The Refund*. (The Refund)
- b. What three stories does Steve Jobs present in his speech? How are they motivating for youths? (How to Live Before You Die?)
4. **Write a news story to be published in a newspaper entitled: "36 killed in plane crash".** [7]
5. **Write a letter to your friend inviting him to visit your hometown and also discuss how s/he will enjoy his/her time in your town.** [8]
6. **Write an essay on "Impact of Globalization in Nepal" in about 300 words.** [10]
7. **Do as indicated in brackets and rewrite the sentences:** (10×1=10)
- a. How much money(steal) in the robbery? (Use the passive form of the verb in the bracket.)
- b. Every parent should visit.....school to meet the teachers.(Fill in the gap with suitable article.)
- c. They said, "Hurray! We've won the match." (Change the sentence into indirect speech.)
- d. They have developed the theory. (*claim*) (Paraphrase the following sentence using the verb given in the bracket)
- e. Daniel/ live /in Kathmandu/? (Write the sentence using 'used to')
- f. Perhaps Jessica knows the answer. (Rewrite the sentence using *may/might/must/can't*)
- g. This is the first time I(drive) a car. (Use the correct tense of the verb in the bracket.))
- h. You live in crowded city. (Make a wish)
- i. Dublin is my favorite city. It is the capital of Ireland. (Join the pair of sentences using appropriate relative clause.)
- j. The traffic was heavy, but we got there in time. (Rewrite the following using *in spite of*.)
8. **Do as instructed:** [5×1=5]
- a. Sometimes unexpected events happen in our life.(incredible/indecipherable/unanticipated) (Choose the correct synonym)
- b. He's enjoying his new job. (*pretend*). (Paraphrase the sentence using the verb in brackets.)
- c. The dog barked loudly. (Underline the verb and write whether it is transitive, intransitive or linking verb.)
- d. Both of my friends live in Kathmandu/My both friends live in Kathmandu. (Rewrite the correct sentence.)
- e. We have fish for dinner.(*seldom*) (Rewrite the sentence with the adverb given in the brackets in the appropriate place.)

Send - Up Exam – 2080

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to answer in their own words as far as practicable.

Attempt all the questions.

1. Read the text and do the tasks

15

When he arrived unexpectedly at his home in the countryside in his office jeep and got down at the gate, his mother, who was lying in an armchair on the veranda, made a futile attempt to get up. 'Kamalam, there is somebody at the gate,' she said, 'somebody in a car.' Kamalam, her eldest daughter, a widow, who was sitting huddled up on the thinna on the veranda, her head and ears covered with a thin bath towel, got up reluctantly, walked slowly to the gate and screwing up her eyes peered into the darkness. She saw a bald, fat, middle-aged man walking in through the gate. 'Oh, Gopi!' She said in her grating voice. 'Why this sudden unexpected visit?' 'Kamalam, who is it?' Her mother asked loudly from the veranda. 'Gopi,' the man said. 'There was a meeting in Thiruvananthapuram. I just dropped in on my way back.' 'Who? Kamalam, who is it?' There was a

note of alarm in Amma's voice. 'Amma, why are you so scared?' Kamalam, Gopi's eldest sister, asked her a little awkwardly. 'As if you are seeing Gopi for the first time!' 'Amma, it's me, Gopi,' he said again. He bent down and brought his face close to her wrinkled cheeks. 'Amma, it's me.' 'Gopi? Kamalam, I can't believe it! Has his school closed for the vacation?' 'Amma is often like this these days. She doesn't recognise anybody.' Gopi's sister explained. 'But sometimes her memory is quite sharp. Then she asks me if you have sent any letter. I tell her everything is fine with you, Vimala and the kids. What is the point of telling her that you haven't written for a year? Poor thing! I wouldn't dream of making her unhappy.' 'I got a promotion last year. After that, I am always on my toes. And there are tours quite often. I don't get any time to write letters.' 'Why don't you ask Vimala to write, or doesn't she get any time, either?' 'What are you mumbling over there?' Amma said loudly. 'I heard somebody coming in a car. Who is it?' 'I told you, it's Gopi.' 'But Gopi is in Delhi, isn't he?' 'Yes, Amma, it's me. I've come from Delhi.' 'Who did Gopi marry?' Amma said, suddenly lowering her voice. 'I mean, what's his wife's name?' 'Don't say you've forgotten her name too. Don't you remember, Vimala, District Collector Nambiar's eldest daughter?' Gopi's sister said. 'Oh, I forgot the name. Was there a letter from Gopi today?' 'There was. He writes every day.' 'I'm terribly upset if I don't get a letter from him every day.' 'He knows it. That's why he writes every day.' 'Look at the way she talks.' Gopi's sister turned to him. 'Just as I told you. You know nothing about what's going on here, do you?' 'Who is that?' Amma said again. 'Who is that in a car?' 'It's me,' Gopi said. 'I had to come to Thiruvananthapuram. I thought I should drop in to see you, Amma.' 'Who is your Amma? What is her name? Where does she live? Is it far from here?' 'No, it is quite near.' 'I don't know how I can bring back her memory,' Gopi's sister said to him exasperatedly. Gopi placed his briefcase on the thinna. He opened it and pulled out the contents. Clothes, files, a shaving set ... 'Do you know my son, Gopi?' Amma asked him. 'He is in Delhi... a Government Officer. He has well-settled He draws a salary of two thousand five hundred rupees. Do you know him?' 'Yes, I know him.' 'Tell him to send me a blanket. There is a cold mist in the mornings. If I catch a cold, it doesn't leave me for a long time. Tell him to send a blanket, won't you? A red one. I had a blanket, the one he bought for me when he was studying in Madras. It is all tattered now, just a ball of knotted yarn. Tell him to send me a red blanket, will you?' 'I'll tell him,' he nodded. 'Please don't forget to tell him. The mist is not good for me. I think I'll stretch myself out for a bit. I have been sitting too long in the armchair. I have a pain in the neck.' Gopi's sister put Amma to bed and came back to the veranda. 'You didn't come to see Amma, did you?' 'Delhi is too expensive. You know I have four children to look after now. I can't make ends meet with my salary. And one has to keep up one's status. It will be a great help if I can raise some money by selling my share of the family property. I came to talk it over with you.' 'You'll sell your land and go away with the money. I know you won't come here anymore after that.' 'Don't say that. I'll come when I get time.' 'Your time!' He saw the irritation on his sister's face. 'It took you more than five years to find time to come here. Amma is eighty-three now. I don't think she will pull on much longer. It took you so long to visit her after the last time.' 'But Amma can't remember who I am,' he said smiling feebly. 'But do you remember your Amma?'

D. Fill in the blanks with an appropriate word from the list.

[5×1=5]

[*Irritation, huddledup, awkwardly, futile, mumbling*]

- All my efforts to convince her for the tour were
- The lost traveller under a shelter made of branches and leaves.
- Her rude behaviour was the main cause of for him.
- She moved in the room, thinking that I was watching.
- She is something, but I can't hear her.

E. Choose the correct words that are similar in meaning to the underlined words.

[5×1=5]

- Rupa studied science reluctantly due to her father's pressure.
 - eagerly
 - unwillingly
 - willingly
 - enthusiastically
- She moved her fingers exasperatedly through her hair.
 - pleasingly
 - calmingly
 - patiently
 - Annoyingly
- My grandmother is over eighty. She lifts her hands feebly.
 - strongly
 - robustly
 - weakly
 - firmly
- She is wearing a tattered shawl.
 - old
 - torn
 - dirty
 - branded
- I have to work at two jobs to make ends meet in this expensive city.
 - earn much money
 - spend much money
 - live on money
 - earn just enough money.

- F. Answer the following questions:** [5]
- Why couldn't the mother recognise her son, Gopi?
 - Why is the sister living with her mother?
 - What is the sister's attitude towards her brother?
 - Does the son love his mother very much? How do you know that?
 - What does the mother actually need: a blanket or the warmth of her son's love?
- 2. Answer the following questions in short:** [5×2 =10]
- Why do you think spring season never came to the giant's garden? [The Selfish Giant]
 - Do you think that Luc is a betrayer of friendship? [Two Little Soldier]
 - What is the speaker's attitude toward war? [The Gift in Wartime]
 - What does a scientist get instead of big money? [Scientific Research is Token of Humankind's Survival]
 - Why does Wasserkopf demand for refund of his tuition fees from his old school? [Refund]
- 3. Give answer in detail.** [2×5 =10]
- Write a character sketch of Ivan Dmitrich Aksionov. (God Sees the Truth but Waits)
 - What is poverty, according to Parker? Why is she unable to do something for her better life? (What is Poverty?)
- 4. Suppose you urgently need some money. Write an email to a friend asking him/her for some money with a reason. Also, explain when and how you will return the money.** [7]
- 5. Write a review of a book/film you have recently read or watched.** [8]
- 6. Our education system focuses on memorization rather than creative thinking. Do you think the knowledge imparted by education may not have practical relevance in one's day-to-day life? Who do you blame for this? Write a letter to the editor of *The National Times* explaining how we can make our education system help prepare students for life.** 10
- 7. Do as instructed in brackets.** [10×1=10]
- Is he working as ----- university professor? (Fill up the with correct article)
 - Biraj likes people admiring him. (Change it into passive)
 - Bibhuti said, "Have you brought note copy?" (Change into indirect speech)
 - Khushi didn't eat bitter gourd when she was a child. (Rewrite the sentence using "used to")
 - Shalu was sick yesterday. (Identify sentence parts)
 - Perhaps he has a car. (Rewrite it using must/can't/may(n't)/might(n't))
 - I don't know where Chhaya is. ----- (you/see) her? (Use correct tense of the verb)
 - You remained hungry after break time. (Express a regret using correct structure)
 - Shirish is a millionaire but lives in a small flat. (Rewrite the sentence using 'although')
 - He paints a picture. (Find out if it is a transitive/intransitive/linking verb.)
- 8. Do as instructed.** [5×1=5]
- My parents _____ me to be a teacher. (advice/advise)
 - The man who is wearing glasses is my uncle's friend. (Classify the underlined words into different word classes.)
 - You ought to talk to the manager to _____ the dispute (solve/settle/clear up).
 - Make a sensible sentence using the idiom, *once in a blue moon*.
 - Find the number of syllables in the word, 'education'.

Send - Up Exam – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to answer in their own words as far as practicable.

Attempt all the questions.

1. Read the given passage and answer the questions below based on it. [15]

Millions of people globally are enrolled in online courses and can learn from the comfort of their homes. Online education can come in different ways. They could be educational webinars, videos on the internet or even face to face learning on the laptop with the teacher through the use of the internet.

For teachers and educator, it provides flexibility in work for it indicates that they can accomplish the same level of education by taking similar online courses despite people's physical locations. They optimize the timelessness and focus of the learning curriculum while students are able to fit learning time into their hectic schedules. Online education offers extensive benefits to students by giving a manageable schedule, student enhancement and augmented educational access and choice. They can learn from various mentors and teachers in different areas, increasing knowledge and perspective. It reduces nervousness among students, as many are able to communicate more through online education than regular classes. They can study at their own speed without any rush. It is usually enjoyable and more comfortable compared to attending traditional classes that spares you the inconvenience of having to travel to a particular destination every single day.

Online education further happens to be comparatively cheaper in comparison to **conventional** educational approaches. Under traditional university programs, the students are required to compensate for transportation, textbooks, institutional facilities such as gyms, libraries, swimming pools, and other costs that expedite the cost of university education up. Online education, on its part, charges only for tuition and additional essential expenses. Virtual education thus offers both the wealthy and the poor the similar opportunity.

Online class allows one to learn innovative approaches through the internet and therefore becomes more skillful. If there are any variations in the syllabus, updates can be done instantly. It is flexible and adaptable since one can study at any time, even at midnight. It can help increase the grades of some people as compared to standard traditional education. Some people learn more through online education. There is no need to wait for office hours to speak to the instructor. You can immediately access them through chat or email. There is considerably a large amount of educational information related to diverse group of people from varied educational, social, cultural and philosophical backgrounds. The subject matter is always available on the internet, unlike traditional education.

Despite the immense and indisputable advantages of online classes, some fundamental drawbacks are pointed out in them. Using the computer too much can make the students **prone** to plagiarism -an intellectual theft. It can also cause vision problems as we sit near the laptop for long hours. This may also hinder physical development. Online education becomes quite complicated for a person to be dependent on themselves for own learning without someone to suggest or teach. It also detaches you from your classmates. It is easier to cheat in an online exam than when in a class and hence may not be advisable during exams. A lot of autonomy in such class may be critical for our learning. There are a number of distractions on the internet through adverts, and this might interrupt our learning. Online education also has significantly less self-assessment.

All modern developments should be viewed and utilized positively. That's why, positive handling of the online classes provides positive and successful results. To succeed in online education, one should choose an ideal university and course to overcome all distractions and obstructions. The other most essential thing is to assure that one needs to maintain communication with the school faculty and fellow students. The proper time administration helps one manages time to complete and submit prescribed assignments in time.

A. Write 'True' or 'False' for the given statements. [5×1 = 5]

- i. Face to face learning on the laptop can happen without the use of internet.
- ii. Some students feel less nervous through online classes.
- iii. The students must pay the fees of the facilities of libraries, sports and others during online classes.
- iv. There are chances of less focus on the study because of a variety of advertisements on the internet.
- v. To be successful in study, online education should be discouraged.

B. Choose correct option or do as instructed. [5×1 =5]

- a. The word 'conventional' in the third paragraph has the synonym in the same paragraph, which is:
i. essential ii. institutional iii. traditional iv. additional
- b. The word 'damage' has the antonym in the third paragraph, which is:
i. compensate ii. expedite iii. further iv. offer
- c. The word 'prone' in the fifth paragraph means
i. blind ii. inclined iii. confused iv. excellent
- d. Which word class does the word 'ideal' in the last paragraph belong to ?
i. verb ii. preposition iii. conjunction iv. Adjective
- e. Make a meaningful sentence of your own by using the word 'autonomy' from the fifth paragraph.

C. Answer the following questions in short. [5×1 =5]

- i. What makes the online classes possible?
ii. How do the students learn through online class without any rush?
iii. What do you mean by plagiarism?
iv. Why is online education complicated?
v. Give suitable title to the passage above.

2. Answer the following question briefly: [5×2=10]

- a. How did the giant realize his mistake? (*The Selfish Giant*)
b. What does the speaker offer to her beloved one? (*The Gift in Wartime*)
c. What are the different stages in human life according to the poet? (*Sharing Tradition*)
d. What may be some reasons that evoked Mrs Wright to murder her own husband? (*The world is a stage*)
e. Why did Jonathan think of himself as 'extraordinarily lucky'? (*Civil Peace*)

3. Answer the following questions in detail: [2×5=10]

- a. How is poverty difficult for Parker? Explain with some specific examples from the text. (*What is Poverty?*)
b. What are the four major problems developed by Lapena with regard to maintaining the oral tradition? Discuss in detail. (*Sharing Tradition*)

4. Write an email to your friend inviting him/her to visit your place. Describe the places where he/she can visit and the required expenses. [7]

5. Suppose you are the secretary of the National Innovation Centre (NIC), Nepal and an innovator from a foreign country had a talk with its chairperson, Mahabir Pun about bilateral cooperation. Write a press release statement. [8]

6. Write an essay on 'Life and Art'. [10]

7. Do as indicated in the brackets: [10x1=10]

- a. Who told you the story? (*Change into passive voice*)
b. He said to me, 'Do you like pork?' (*Change into indirect speech*)
c. Mahesh forgets closing the windows. (tend) (*Paraphrase the sentence using the verb in brackets.*)
d. He/go to fishing in the summer? (*Rewrite the sentence using the correct form of 'used to'.*)
e. I doubt if it rains later on. (*Rewrite the sentence using may/might, must or can't*)
f. It's cold. (*Express your wish using 'I wish/if only'*)
g. My aunt Nita is coming to visit next week. She is a journalist. (*Join the sentences with appropriate relative clause*)
h. He works slowly. He makes a mistake. (*Combine the sentences using 'In spite of'.*)
i. The phone is ringing. I (answer) it. (*Complete the sentence using will/going to with the verb in brackets.*)
j. I never have understood her. (*Correct the sentence if necessary*)

8. Do as indicated: [5×1=5]

- a. Write the wordclass of the underlined words:

- The man who is wearing glasses in my uncle's friend.
- Find the silent letters in the words: *Wednesday, doubt*
 - I can't (speak/talk) Hindi. (*Choose the correct word*)
 - Write the plural form of the words: *goose, oasis*
 - Make a sentence using the word: *hazy*

Send - Up Exam – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to answer in their own words as far as practicable.

Attempt all the questions.

1. Read the given passage and answer the questions below based on it.

[15]

To achieve genuine sustainability, energy systems need to be embedded in society and ecosystems. They can only be considered sustainable socially if they do not enclose and usurp the ecological space of the poor and lead to energy equity. They can only be considered sustainable ecologically if they facilitate the shift to decentralized, low-impact economies and do not introduce risks of atmosphere or nuclear pollution. Ecological democracy must be the context for sustainable energy choice.

Climate chaos is being recognized, even by the establishment, as a serious challenge for humanity. The IPCC has categorically established that the climate change we are living through is a result of human activity. The human activities responsible are those that require fossil fuels. We are releasing more CO₂ into the atmosphere than the planet can recycle and absorb. There is a consciousness that to avoid catastrophic climate change we need to contain the global temperature rise within 2 degrees Celsius. Yet most "solutions" for reducing emissions maintain and even expand energy-intensive production and consumption patterns. There is a deep disconnect between the aim to reduce carbon emissions by the necessary 80 to 90 percent and the steps prescribe to do so.

The problem of climate change is clearly related to the **issue** of energy. However, it is also an issue of the economy, how goods are product and distributed, how our towns and homes are designed, how our food and clothing is produced. Yet globalization and industrialization are not even referred to in the climate change negotiations and discussion. The issue of over extraction and overconsumption of energy is being avoided, as is the issue of the injustice to the poor and other life-forms whose homes and habitats, lives and futures are being sacrificed to provide the energy and resources to run a globalized consumerist economy. The debate has been deflected from climate justice, energy justice, and ecological justice -diverse aspects of what I call Earth Democracy. It is being narrowed down to the problems and solutions from the perspectives of the rich, from the perspective of the rich, from the perspective of industrialized, urbanized societies.

From the perspective of the rich, the problem needing to be solved is how to control the world's oil supply (through militarization) while simultaneously finding alternatives to oil before the oil runs out, and before the climate change disrupts the current social order, however, this is a reductionist analysis, leading to reductionist solutions. The first reduction is at the level of energy. Energy, a multidimensional category, is reduced to industrial consumptive energy alone-energy as electricity or energy as fuel. And society, in all its diversity, has been reduced to the society of the rich, especially in rich countries. What is left out is non-consumptive energy-the creative energies of the universe. Gait's self-organizing energy, the creative human energy to work and to produce, to organize, and to transform. Also left out is the perspective of the poor-especially of the nonindustrial societies of the so called third world - and the rights of other species.

The climate crisis signifies a clash between the laws arising from the workings of the universe, the planet and sustainable human communities and the laws of capital accumulation shaped by those who own and control capital. These are the so-called laws of the market, the laws imposed by the IMF and World Bank through structural adjustment, the laws embodied in the WTO and other "free trade" agreements.

A. Rewrite the sentences by filling in the blanks with appropriate words:

[5×1=5]

- The word "included" is synonymous to the word in the first paragraph, which is
- The word class in which the word 'humanity' lies in the second paragraph is

- c. The word 'issue' in the third paragraph has similar meaning to the next word in the same paragraph,
 d. "A view or angle of looking at something" is the description of the word in the fourth paragraph, which is
 e. The word 'decrease' is antonymous to the word in the last paragraph, which is
- B. State whether the following sentence are 'True' or 'False'. [5×1=5]**
- Genuine sustainability considers the ecological space of the poor.
 - Climate chaos is the product of human beings.
 - The issue of over extraction and overconsumption of energy isn't the issue of injustice to the poor.
 - Energy as electricity or energy as fuel is a multidimensional category.
 - The perspective of the poor has the similar status to the rights of the other species.
- C. Answer the following questions: [5×1=5]**
- What is responsible for climate chaos?
 - Mention diverse aspects of Earth Democracy.
 - Explain reductionist analysis.
 - Which aspects are in the clash due to which the climate crisis arises?
 - Give a suitable title to the passage.
- 2. Answer the following questions briefly: [5×2 =10]**
- Describe the portrait that the narrator saw in the room. (*Oval portrait*)
 - What is the main theme of the poem 'Who are you, little i ?' (*Who are you, little i*)
 - What does the slogan 'stay hungry; stay foolish' mean to you? (*How to Live Before You Die*)
 - What dramatic irony do you find in the play 'A Sunny Morning'?
(*A Sunny Morning*)
 - What motivated and encouraged the child to start and continue on his journey? (*The Wish*)
- 3. Answer the following questions in detail. [2×5 =10]**
- How does Keilis-Borok justify that scientific research is the token of humankind's survival?
(*Scientific Research is a Token of Humankind's Survival*)
 - Summarize the story 'Two Little Soldiers'. (*Two Little Soldiers*)
- 4. Write a letter to your parents describing how you are preparing for your NEB examination. [7]**
- 5. Write a travelogue of your recent visit to a historical/religious place. [8]**
- 6. Write an essay on the topic 'Our Culture, Our Identity'. [10]**
- 7. Do as indicated in the brackets: [10×1=10]**
- I don't like people staring at me. (*Change into passive voice*)
 - He said, 'No, I haven't stolen anyone's bag. (*Change into indirect speech*)
 - She has lost her weight. (seem)
(*Paraphrase the sentence using the verb in brackets.*)
 - He/play/football every weekend? (*Rewrite the sentence using the correct form of 'used to'.*)
 - I'm sure the principal isn't in his office.
(*Rewrite the sentence using may/might, must or can't*)
 - You feel lonely. (*Express your wish using 'I wish/if only'*)
 - My essay on terrorism got a really good mark in the end. I found it quite difficult.
(*Join the sentences with appropriate relative clause*)
 - He is an octogenarian. He still leads an active life.
(*Combine the sentences using 'Despite'.*)
 - I can't join you at the party. I (be) away for two weeks.
(*Complete the sentence using will/going to with the verb in brackets.*)
 - We very much enjoyed the party. (*Correct the sentence if necessary*)
- 8. Do as indicated: [5×1=5]**
- Write the wordclass of the underlined words:
I bought a round table in the supermarket.

- b. Find the silent letters in the words: *ghost, hymn*
- c. Does television (affect/effect) children? (*Choose the correct word*)
- d. Write the plural form of the words: fungus, ox
- e. Make a sentence using the word: eminent

Send - Up Exam – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: C

Candidates are required to answer in their own words as far as practicable.

Attempt all the questions.

1. Read the given passage and answer the questions below based on it.

[15]

Life on our planet earth began with the sea; it is the birth place of life on the earth. The earth is the only planet of our solar system so far known which contains plenty of water and this water has made our earth colorful, pulsating with life of a vast variety. At present sea occupies about 70 percent of the earth's surface. In the southern hemisphere it occupies more area than that in the northern. About 97% of the total water on the surface of the earth is found in the seas and the remaining three percent, which is generally fresh, in lakes, rivers, ponds, etc.

Sea has given food and shelter to countless creatures. It is a potential source of protein. In 1900 the world population was only 150 crores, now it is more than 700 crores and is increasing at a very fast rate. As a result, there is a terrible hunger in many parts of the world. In Africa, Asia and South America, millions of people do not get enough to eat. Many die of malnutrition. Sea, if used scientifically and judiciously, can meet most of our demands.

Plankton or algae mostly constitutes the plant life. Like plant plankton there are also animal plankton; the smallest living creature in the sea. These animal plankton feed on plant plankton and small fish. Thus, there is an unbroken chain of life in the sea. Arctic and Antarctic seas abound in plankton and algae and so in fish also. Blue whales, the largest living creatures of the world, are also found here in great number.

Some countries have developed sea farming to a great extent. The Japanese and the Hawaiians relish eating sea plants but it is not so in other countries though some use them to feed their cattle or as manure in their fields. The fact is that sea plants contain rich nutrients not found in other vegetarian food. It is good that even in our country some scientists have developed some recipes for curries, jams, etc. to be made from algae.

But we must remember one thing that sea is not to be exploited immediately. For example, man in his greed has hunted whales and some other sea creatures so recklessly that some of their species have either become extinct or are on the verge of extinction. Now, nations of the world have realized their folly and have taken some joint decisions. For example, one such decision is that the size of the holes in fishing nets should be big enough to let baby fish escape through. Otherwise, killing of large quantities of very young fish would have an adverse effect on the fish population.

A. Choose the most appropriate options:

[5×1=5]

i. Write the correct option:

- a. Sky is the birth place of life on the earth.
- b. Moon is the birth place of life on the earth.
- c. Sea is the birth place of life on the earth.
- d. Land is the birth place of life on the earth.

ii. Plankton or algae mostly constitutes:

- a. the wild life b. the human life c. the sea life d. the plant life

iii. Sea plants contain rich nutrient not found in:

- a. other plants b. other vegetarian food
- c. non-vegetarian food d. milk and milk products

- iv. The antonym of 'plenty' is:
 a. adverse b. adequate c. scarcity d. sufficient
- v. The antonym of 'active' is
 a. existence b. pessimistic c. farsighted d. extinct

B. Answer the following questions: [5×1=5]

- a. Why is there terrible hunger in many parts of the world?
- b. Why should the size of the holes in fishing nets be big enough?
- c. Do you think that sea farming helps to reduce death due to malnutrition? Give reasons.
- d. Why have whales and other sea creatures become extinct or are on the verge of extinction?
- e. Write appropriate title for the given passage.

C. Do the following as indicated. [5×1=5]

- i. Find a word from the passage which means the same as 'wisely'. (*Para 2*)
- ii. Find a word from the passage which means the same as 'unfavorable' (*Para 5*)
- iii. Arctic and Antarctic seas abound in plant and algae. (*True/False*)
- iv. The animal plankton is the biggest living creature in the sea. (*True/False*)
- v. Sea is a potential source of vitamin. (*True/False*)

2. Answer the following question briefly: [5×2=10]

- a. What was the boy afraid of while walking across the carpet and why? (*The Wish*)
- b. Explain any two hyperboles used in the poem 'A Red, Red Rose'. (*A Red, Red Rose*)
- c. In which area did Keilis-Borok's theoretical knowledge have a direct application? (*Scientific Research is a Token of Humankind's Survival*)
- d. Briefly describe the romance of Don Gonzalo and Dona Laura when they were young. (*A Sunny Morning*)
- e. Do you think that Luc is a betrayer of friendship? Give reasons.
(*Two Little Soldiers*)

3. Answer the following question in detail: [2×5=10]

- a. Explain the spiritual transformation in Aksionov's life in the story.
(*God Sees the Truth but Waits*)
- b. Describe any five symbols found in the play 'Trifles'. (*Trifles*)

4. Write a diary of a day describing a historically or culturally important place where you recently visited. [7]

5. Write a short biography of a famous payer/actors/singer/national hero/politician. [8]

6. Write an essay on the topic 'Science; a blessing or a curse?' [10]

7. Do as indicated in the brackets: [10×1=10]

- a. Is he repairing the bicycle? (*Change into passive voice*)
- b. He said, 'I don't want to go to the party unless she invites me'. (*Change into indirect speech*)
- c. He's enjoying his new job. (pretend) (*Paraphrase the sentence using the verb in brackets.*)
- d. I/not like school when I was in pre-school. (*Rewrite the sentence using the correct form of 'used to'.*)
- e. Perhaps she knew the answer. (*Rewrite the sentence using may/might, must or can't*)
- f. Some boys are following you and you're alone. (*Express your wish using 'I wish/if only'*)
- g. The Mayans built many stunning temples. They lived in Central America. (*Join the sentence with appropriate relative clause*)
- h. Ramila didn't get the job. She had all the necessary qualifications. (*Combine the sentences using 'In spite of.'*)
- i. I have got a ticket for the play. I (watch) it on Saturday.
(*Complete the sentence using will/going to with the verb in brackets.*)
- j. Pritam doesn't get up before seven usually. (*Correct the sentence if necessary*)

8. Do as indicated: [5×1=5]

- a. Write the wordclass of the underlined words:

Alas, she is dead.

- b. Find the silent letters in the words: *receipt, debt*
- c. My parents (advice/advise) me to be a teacher.
(Choose the correct word)
- d. Write the plural form of the words: *analysis, curriculum*
- e. Make a sentence using the word: *ruthless*

Send - Up Exam – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: D

Candidates are required to answer in their own words as far as practicable.

Attempt all the questions.

1. Read the given passage and answer the questions below based on it.

[15]

The Journey of Santiago

While sleeping near a sycamore tree in an abandoned church, Santiago, a shepherd, has a recurring dream about a child who tells him that he will find a hidden treasure if he travels to the Egyptian pyramids. An old woman tells Santiago that this dream is prophetic and that he must follow its instructions. Santiago is uncertain, however, since he enjoys the life of a shepherd.

Next Santiago meets a mysterious old man who seems able to read his mind. This man introduces himself as Melchizedek, or the King of Salem. He tells Santiago about good and bad omens and says that it is the shepherd boy's duty to pursue his Personal Legend. Melchizedek then gives Santiago two stones, Urim and Thummim, with which to interpret omens.

Santiago wavers briefly before selling his flock and purchasing a ticket to Tangier, in northern Africa, to which he travels by boat. Shortly after he arrives there, a thief steals all of Santiago's money, so the shepherd boy decides to look for a way to make enough money to return home. He finds work in the shop of a crystal merchant, where Santiago makes improvements that reap considerable financial rewards.

After eleven months of working in the shop, Santiago is unsure of how to proceed. Should he return to Andalusia a rich man and buy more sheep? Or should he cross the vast Sahara in pursuit of the hidden treasure of his dreams? He joins a caravan traveling to Egypt.

Santiago meets an Englishman who wants to learn the secret of alchemy, or turning any metal into gold, from a famous alchemist who lives at an oasis on the way to the pyramids. While traveling, Santiago begins listening to the desert and discovering the Soul of the World. The caravan eventually reaches the oasis, and there Santiago meets an Arab girl named Fatima and falls in love with her instantly. The caravan leader gathers the travelers together and tells them that tribal warfare prevents them from continuing their journey. The tribal chieftain arms his men, and they are well-prepared when the oasis is indeed invaded. The alchemist offers to cross the desert with Santiago.

Soon the two men enter into an area of intense tribal warfare. Warriors hold the two men captive, but eventually allow them to continue their journey. The alchemist tells Santiago that he needs to return to the oasis, and that the rest of the trip is Santiago's to make alone so that he can claim his Personal Legend.

Santiago arrives at the Egyptian pyramids and begins to dig. He finds nothing buried in the ground. Thieves beat Santiago and rob him off his money. After he tells them of his dream, though, one of the thieves recounts his own dream about a buried treasure in the sacristy of an abandoned church.

Returning to Andalusia, Santiago goes back to the church where he dreamed of the treasure near the pyramids. He digs where he slept, beneath a sycamore tree, and there it is: Santiago's treasure.

A. Answer the following questions choosing the most appropriate option.

[5×1=5]

- i. The warriors had held Santiago and the alchemist captives and

 - a. never freed them
 - b. unconfined them after sometime
 - c. punished them brutally

- ii. Santiago in quite bewilderment joins

- a. the vast Sahara in pursuit of the hidden treasure of his dreams.
- b. a group to Andalusia to be a rich man and buy more sheep.
- c. the caravan journeying to the land of pyramids.

- iii. The mysterious old man whom Santiago met
 - a. could prophesize the future.
 - b. recommended Santiago to join the caravan travelling to Egypt.
 - c. employed him in the crystal shop.
- iv. Santiago meets an Englishman who
 - a. can turn any metal into gold.
 - b. can teach people the secrecy of alchemy.
 - c. was willing to learn the alchemy.
- v. One of the thieves
 - a. used to dream about the buried treasure.
 - b. had visited the sacristy of the church.
 - c. knew the location of the buried treasure.

B. Give a one-word answer (from the text) to the following glossary. [5×1=5]

- i. A fertile or a green area in an arid region such as desert usually having a spring.
- ii. Occuring again periodically or repeatedly.
- iii. A phenomenon that is believed to foretell the future often signifying the advent of change.
- iv. A group of travelers on a journey through desert or a hostile region.
- v. Placed or hidden underground.

C. Answer the following questions: [5×1=5]

- i. Describe Santiago's dream about a child.
- ii. When did Santiago look for a job?
- iii. What is alchemy?
- iv. Where does Santiago go to claim his Personal Legend?
- v. Who hints Santiago where to look for the buried treasure?

2. Answer the following questions briefly: [5×2 =10]

- a. How does Jonathan Iwegbu respond to his sympathizers at the end of the story? (*Civil Peace*)
- b. Why is the fourth stage (i.e, as soldier) taken very seriously?(*All the World's a Stage*)
- c. What does Parker mean by "The poor are always silent"? (*What is Poverty*)
- d. How does the Mathematics teacher outsmart Wasserkopf? (*Refund*)
- e. What details does the astrologer give the stranger about his past? (*An Astrologer's Day*)

3. Answer the following questions in detail. [2×5 =10]

- a. What inspirations have you got by reading the essay 'How to Live Before You Die'? (*How to Live Before You Die*)
- b. What does Haldane require in his personal life and what he requires for the society where he lives? (*What I Require from Life*)

4. Prepare a short speech on the topic 'Healthy Lifestyle'. [7]

5. Write a review of a book/film that you have recently read/watched. [8]

6. Write a news article giving your views on the uses and misuses of internet in the academic aspect of a student. [10]

7. Do as indicated in the brackets: [10×1=10]

- a. Who played the Madal in the party? (*Change into passive voice*)
- b. Neha said, 'You took my money'. (*Change into indirect speech*)
- c. Ashika is worried about her exam. (Seem) (*Paraphrase the sentence using the verb in brackets.*)
- d. My sister/not play tennis when she was at school.(*Rewrite the sentence using the correct form of 'used to'.*)

- e. I'm sure he doesn't have a car. *(Rewrite the sentence using may/might, must or can't)*
- f. You lost your mobile Phone. *(Express your regret using 'I wish/if only')*
- g. The early 1960s was a very exciting time in pop culture. The Beatles first started then. *(Join the sentences with appropriate relative clause)*
- h. I speak English well. My first language is actually Maithili. *(Combine the sentences using 'Although')*
- i. If you don't stop bullying her, I (tell) the teacher. *(Complete the sentence using will/going to with the verb in brackets.)*
- j. We have fish seldom for dinner. *Correct the sentence if necessary)*

8. Do as indicated:

[5×1=5]

- a. Write the wordclass of the underlined words:
I have never been to Japan.
- b. Find the silent letters in the words: *handkerchief, exhaust*
- c. What did you (say/tell) to her?
(Choose the correct word)
- d. Write the plural form of the words: *louse, cactus*
- e. Make a sentence using the word: *humiliate*

Send - Up Exam – 2082

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to answer in their own words as far as practicable.

Attempt all the questions.

Attempt all questions.

1. Read the following passage and answer the given questions below:

The world's highest mountain Mount Everest is 0.86m higher than had been previously officially calculated, Nepal and China have jointly announced. Until now the countries differed over whether to add the snow cap on top. The new height is 8,848.86m (29,032 ft). China's previous official measurement of 8,844.43m had put the mountain nearly four metres lower than Nepal's. Everest Officials at Nepal's foreign ministry and department of survey said surveyors from both countries had co-ordinated to agree on the new height. The agreement to jointly announce the new measurement of the Earth's highest point was made during Chinese President Xi Jinping's visit to the Nepalese capital, Kathmandu last year.

Chinese authorities had said previously Mount Everest should be measured to its rock height, while Nepalese authorities argued the snow on top of the summit should be included. The Chinese surveyors had calculated their figure after they measured the mountain in 2005. Nepal's government officials told the BBC in 2012 that they were under pressure from China to accept the Chinese height and therefore they had decided to go for a fresh measurement to "set the record straight once and for all". The 8,848m height, Nepal had been using for Mount Everest was determined by the Survey of India in 1954, but for the first time the country has now conducted its own measurement of the summit. Four Nepalese land surveyors spent two years training for the mission, before heading to the summit. "Before this, we had never done the measurement ourselves," Damodar Dhakal, spokesman at Nepal's department of survey, told the BBC. "Now that we have a young, technical team [who could also go to the Everest summit], we could do it on our own," Mr. Dhakal said. Nepal's lead surveyor Khimlal Gautam lost his toe due to frostbite while on the summit to install height-measuring equipment last year. "For summiteers, scaling the highest peak means a great accomplishment. For us, it was just the beginning," Mr. Gautam had told BBC Nepali after his return. "Unlike other surveys of the Everest in the past, we chose 03:00 to minimise errors that could have been caused because of sunlight in the day time."

Some geologists have suggested a major earthquake in 2015 may have had an impact on Mount Everest's height. The 7.8 magnitude earthquake killed nearly 9,000 people in Nepal, and caused an avalanche which buried parts of the base camp at the mountain. At least 18 20 climbers were killed. Some geologists said the earthquake

may have caused Everest's snow cap to shrink. Scientists had found that some other Himalayan peaks such as Langtang Himal, mostly to the north of Kathmandu and close to the epicentre, had reduced in height by approximately a metre after the earthquake. Others have argued that Mount Everest, like other Himalayan peaks, may have actually grown over time because of the shifting tectonic plates it sits on. But experts say major earthquakes can result in that process being reversed. "The 2015 earthquake is also a major reason why we re-measured the mountain," said Mr. Dhakal.

Questions:

A. Choose the best answer. **(5×1=5)**

- a. The word 'announce' in the 8th line means:
 - i. utter words to convey information.
 - ii. make a formal statement about a fact.
 - iii. communicate information to someone.
- b. The word 'fresh' in the phrase 'fresh measurement' in the 17th line means:
 - i. having its original qualities unimpaired.
 - ii. not frozen, tinned or otherwise preserved.
 - iii. not previously done, new or different.
- c. The word 'accomplishment' in the 28th line means:
 - i. the omission of expected action.
 - ii. an act or instance of falling.
 - iii. something that has been achieved successfully.
- d. The word 'shrink' in the 27th line is opposite in meaning to:
 - i. expand ii. contract iii. reduce
- e. The word 'approximately' in the 30th line means:
 - i. exactly ii. nearly iii. precisely.

B. Complete the following sentences in NOT MORE THAN FOUR WORDS. **(5×1=5)**

- a. Nepal and China previously had different views about adding the ----- to the height of Mt. Everest.
- b. Surveyors from both Nepal and China had worked together to come up with the same view on the ----- of Mt. Everest.
- c. China's earlier official measurement of 8844.43m was based on the measurement done in -----
- d. The team leader of Nepal's surveyors lost his toe during the installment -----on the top.
- e. Some geologists also had their view that the change in -----under Mt. Everest may have increased its height.

C. Answer the following questions: **(5×1=5)**

- a. What did the surveyors from both Nepal and China agree on to come up with about Mt. Everest?
- b. Why did both countries determine to carry out the new measurement of Mt. Everest?
- c. Which sentence in the text indicates that it was the first time for Nepal to measure the height of Mt. Everest?
- d. Why did the Nepali team take 3:00 as a reference in measuring the summit?
- e. What covered the parts of the base camp at the mountains during 2015 earthquake?

2. Answer the following question briefly: **[5×2=10]**

- a. How did the God punish the selfish giant for being cruel to the children? (*The Selfish Giant*)
- b. Do you think that Luc is a betrayer of friendship? State reasons. (*Two Little soldiers*)

OR

- c. What does the writer require from life? (*What I Require from Life*)
- c. What gifts does the speaker offer to her dead husband? (*Sharing Tradition*)
- d. What is poverty according to Parker? (*What is Poverty?*)
- e. Do you believe that Mrs. Wright killed her husband? State reasons. (*Trifles*)

3. Answer the following questions in detail: **[2×5=10]**

- a. How did the teachers outwit Wasserkopf? Explain. (*Refund?*)
- b. How does the essayist (Keilis-Borok) justify that scientific research is the token of humankind's survival? (*Scientific Research is a Token of Humankind's Survival*)

OR

Write the stories that Steve Jobs Shared at Stanford University 2005 commencement address. How are they inspiring? (*How to Live Before Your Die*)

4. Write a news story entitled 'Five demonstrators killed in Kathmandu'. [7]
5. Suppose you are the secretary of the National Innovation Centre (NIC), Nepal and an innovator from a foreign country had a talk with its chairperson, Dr. Mahabir Pun about bilateral cooperation. Write a press release statement. [8]
6. Write an essay on 'Tourism in Nepal: Prospects and problems'. [10]
7. Do as instructed in the brackets and rewrite the sentences: [10x1=10]
 - a. I have to go to _____ bank today to deposit some money. (*fill in the gap with a suitable article.*)
 - b. My manager has told him to arrive earlier. (*Change into passive voice*)
 - c. My friend said, "Where are they staying?" (*Change into indirect speech*)
 - d. Your car has broken down. (*Paraphrase the sentence using the verb 'appear'.*)
 - e. Perhaps she wants to be alone. (*Rewrite the sentence using may/might/must/can't*)
 - f. I (know) Sarmila for three years. (*Use the correct tense of the verbs in brackets.*)
 - g. You feel lonely. (*Express your wish using the correct structure.*)
 - h. Amelia speaks English and Chinese fluently. She is from Shanghai. (*Join the sentences with appropriate relative clause.*)
 - i. She is very poor, but she still wears expensive clothes. (*Join the sentences with 'although'.*)
 - j. The man with all his children (*live/lives*) in the city (*Choose the correct option.*)
8. Do as indicated: [5x1=5]
 - a. Arrange the words in correct alphabetical order: anxiety, ancient, anatomy, answer
 - b. Her story is unbelievable. Here, the underlined word means:
 - i. unanticipated
 - ii. Incredible
 - iii. Indecipherable
 - c. Find the odd word based on the pronunciation of the plural suffix (s/es): cats, dogs, books, roofs.
 - d. Make a sentence using the word 'dire'.
 - e. Some tribes worship their gods before they (prey/pray). (*Choose the correct option.*)

Send - Up Exam – 2082

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to answer in their own words as far as practicable.

Attempt all the questions.

1. Read the following passage and answer the question given below: [15]

Computers are capable of doing extremely complicated work in all branches of learning. They can solve the most complex mathematical problems or put thousand unrelated data in order. These machines can be put to varied uses. For instance, they can provide information on the best way to prevent traffic accidents. They work accurately and at high speed.

They save research workers' years of hard work. This whole process by which machines can be used to work for us has been called 'automation'. In future automation may enable human beings to enjoy more leisure than they do today. The coming of automation is bound to have important social consequences. Some years ago, an expert on automation, Sir Leon Bagrit pointed out that it was a mistake to believe that these machines could think. There is no possibility that human beings will be controlled by machines. Though computers are capable of learning from their mistakes and improving on their performances, they need detailed instructions from human beings to be able to operate. They can never lead independent lives or rule the world by taking decisions of their own.

Sir Leon said that in future, computers would be developed which would be small enough to be carried in one's pocket. Ordinary people would then be able to use them to obtain valuable information. Computers could be plugged into a wireless network and can be used like radios. For instance, people, going on holiday,

could be informed about weather conditions. Car drivers can be given an alternative route, when there is a traffic jam. It will also be possible to make tiny translating machines. This will enable people, who do not share a common language, to talk to each other without any difficulty or to read foreign publications.

It is impossible to assess the importance of a machine of this sort, for many international misunderstandings are caused simply due to our failure to understand each other. Computers will also be used in ordinary public hospitals. By providing a machine with a patient's systems, a doctor will be able to diagnose the nature of his illness. Similarly, machines could be used to keep a check on a patient's health record and bring it up to date. Doctors will, therefore, have immediate access to great many facts which will help them in their work. Bookkeepers and accountants too could be relieved of dull clerical work. For the tedious task of compiling and checking lists of figures could be done entirely by machines. Computers are the most efficient servant man has ever had and there is no limit to the way they can be used to improve our lives.

A. Choose the most appropriate option: [5×1=5]

- a) Write out the correct option:
- There is no possibility that human beings can be on their own with no need of machines.
 - Human beings are likely to be controlled by machines one day.
 - There is no possibility that human beings will ever be controlled by machines.
 - Machines can replace humans.
- b) Write out the correct option:
- Computers can solve only certain mathematical problems.
 - Computers can't solve any mathematical problems.
 - Computers can solve the most complex mathematical problems.
 - Computers can solve only simple mathematical problems.
- c) Computers can be used to
- to find treatment for the patient's illness.
 - to prescribe a medicine for the patient.
 - to diagnose the nature of patient's illness.
 - to keep the patient in good mood.
- d) Many international misunderstandings are caused due to our failure to understand
- ourselves.
 - other nations.
 - our friends.
 - each other.
- e) The antonym of the word 'complicated' is
- difficult
 - simple.
 - easy
 - strange

B. Fill in the blanks or do as instructed: [5×1=5]

- a) In future, may enable human beings to enjoy more leisure than they do today.
- b) Sir Leon Bagrit said that in future, would be developed which would be small enough to be carried in one's pocket.
- c) Computers are capable of doing extremely complicated work in all branches of learning. [True/False]
- d) Computers are the most inefficient servant that man has ever had. [True/False]
- e) Find the synonyms of the following words from the passage:
- results
 - monotonous

C. Answer the following questions: [5×1=5]

- What is 'automation'?
- How are computers and human beings different?
- How will ordinary people be benefitted by computers in future?
- How are the international misunderstandings created?
- How can computers become efficient servants?

2. Answer the following questions briefly: [5×2 =10]

- How did the woman's beauty condemn her to death? (*The Oval Portrait*)
- How did the astrologer surprise Guru Nayak? What advice did he give him? (*An Astrologer's Day*)

OR

- What is the importance of the oral tradition according to Lapena? (*Sharing Tradition*)
- What effect does the November sunset have on the speaker? (*Who are you, little i?*)

- d. In which area did Keilis-Borok's theoretical knowledge have a direct application? (*Scientific Research is a Token of Humankind's Survival*)
- e. Why does Wasserkopf demand a refund of his tuition fees from the school? (*Refund*)
3. **Answer the following questions in detail:** [2×5 =10]
- a. How is poverty difficult for Parker and her children? Describe her experiences of being a poor woman. (*What is Poverty*)
- b. Write the character sketch of Jonathan Iwegbu. What kind of attitude towards life do you think you would have if your situation was similar to that of Jonathan's? (*Civil Peace*)

OR

“The Wish” is a psychological story about self-confidence overcoming fear. Elaborate the statement based on the story. (*The Wish*)

4. **Write a review of a book/film you have recently read/watched.** [7]
5. **Write a biography of a famous person of Nepal (Eg. Warrior of Anglo-Nepal War/a freedom fighter/a good politician or leader/singer/player /educator, etc.)** [8]
6. **Write an essay on 'Is Science blessing or a curse?'** [10]
7. **Do as instructed in the brackets and rewrite the sentences:** [10×1=10]
- a. Is he working as _____ university professor? (*Fill the gap with suitable article*)
- b. Someone had broken the window by 3:00 am. (*Change into passive voice*)
- c. She said, "I don't want to go to the party unless he invites me." (*Change into indirect speech*)
- d. He's enjoying his new job. (*Paraphrase the sentence using the verb 'pretend'*.)
- e. I'm sure he has a car. (*Rewrite the sentence using may/might, must or can't*)
- f. How long (you/know) Sarmila for? (*Use the correct tense of the verbs in brackets*)
- g. You have lost your mobile phone. (*Express your regret using the correct structure*)
- h. The person was really helpful. They spoke to him.
(*Join the sentences with appropriate relative clause.*)
- i. They have a lot of money, but they are still not happy. (*Join the sentences with 'despite'.*)
- j. Every one of the workers (*receive/receives*) the same benefits. (*choose the correct option.*)
8. **Do as indicated:** [5×1=5]
- a. Arrange the words in correct alphabetical order:
Smash, smooth, smart, smack
- b. Sometimes unexpected events happen in our life. Here, the underlined word means:
i) incredible ii) indecipherable iii) unanticipated
- c. Which word has /d/ sound at the end? missed, washed, ended, smiled
- d. Make a sentence using the word 'reluctance'.
- e. Finally, in grade 11, I learnt the spelling of (grammar/grammer). (*Choose the correct option.*)

NEB-Model Questions – 2078

Time: 3 hours

F.M.: 75

P.M.: 27

1. **Read the text and do the tasks.**

15

Mt Everest grows by nearly a metre to new height

The world's highest mountain Mount Everest is 0.86m higher than had been previously officially calculated, Nepal and China have jointly announced. Until now the countries differed over whether to add the snow cap on top. The new height is 8,848.86m (29,032 ft). China's previous official measurement of 8,844.43m had put the mountain nearly four metres lower than Nepal's. Everest Officials at Nepal's foreign ministry and department of survey said surveyors from both countries had co-ordinated to agree on the new height. The agreement to jointly announce the new measurement of the Earth's highest point was made during Chinese President Xi Jinping's visit to the Nepalese capital, Kathmandu last year.

Chinese authorities had said previously Mount Everest should be measured to its rock height, while Nepalese authorities argued the snow on top of the summit should be included. The Chinese surveyors had calculated

their figure after they measured the mountain in 2005. Nepal's government officials told the BBC in 2012 that they were under pressure from China to accept the Chinese height and therefore they had decided to go for a fresh measurement to "set the record straight once and for all". The 8,848m height, Nepal had been using for Mount Everest was determined by the Survey of India in 1954, but for the first time the country has now conducted its own measurement of the summit. Four Nepalese land surveyors spent two years training for the mission, before heading to the summit. "Before this, we had never done the measurement ourselves," Damodar Dhakal, spokesman at Nepal's department of survey, told the BBC. "Now that we have a young, technical team [who could also go to the Everest summit], we could do it on our own," Mr. Dhakal said. Nepal's lead surveyor Khimlal Gautam lost his toe due to frostbite while on the summit to install height-measuring equipment last year. "For summiteers, scaling the highest peak means a great accomplishment. For us, it was just the beginning," Mr. Gautam had told BBC Nepali after his return. "Unlike other surveys of the Everest in the past, we chose 03:00 to minimise errors that could have been caused because of sunlight in the day time."

Some geologists have suggested a major earthquake in 2015 may have had an impact on Mount Everest's height. The 7.8 magnitude earthquake killed nearly 9,000 people in Nepal, and caused an avalanche which buried parts of the base camp at the mountain. At least 18 20 climbers were killed. Some geologists said the earthquake may have caused Everest's snow cap to shrink. Scientists had found that some other Himalayan peaks such as Langtang Himal, mostly to the north of Kathmandu and close to the epicentre, had reduced in height by approximately a metre after the earthquake. Others have argued that Mount Everest, like other Himalayan peaks, may have actually grown over time because of the shifting tectonic plates it sits on. But experts say major earthquakes can result in that process being reversed. "The 2015 earthquake is also a major reason why we re-measured the mountain," said Mr. Dhakal.

A. Choose the best answer. (5×1=5)

- a. The word 'announce' in the 7th line means:
 - i. utter words to convey information.
 - ii. make a formal statement about a fact.
 - iii. communicate information to someone.
- b. The word 'fresh' in the phrase 'fresh measurement' in the second paragraph means:
 - i. having its original qualities unimpaired.
 - ii. not frozen, tinned or otherwise preserved.
 - iii. not previously done, new or different.
- c. The word 'accomplishment' in the 22nd line means:
 - i. the omission of expected action.
 - ii. an act or instance of falling.
 - iii. something that has been achieved successfully.
- d. The word 'shrink' in the 29th line is opposite in meaning to:
 - i. expand.
 - ii. contract.
 - iii. reduce.
- e. The word 'approximately' in line 30 means:
 - i. exactly.
 - ii. nearly.
 - iii. precisely.

B. Complete the following sentences in NOT MORE THAN FOUR WORDS. (5×1=5)

- a. Nepal and China previously had different views about adding the to the height of Mt. Everest.
- b. Surveyors from both Nepal and China had worked together to come up with the same view on the of Mt. Everest. 21
- c. China's earlier official measurement of 8844.43m was based on the measurement done in
- d. The team leader of Nepal's surveyors lost his toe during the installment of on the top.
- e. Some geologists also had their view that the change in under Mt. Everest may have increased its height.

C. Answer the following questions. (5×1=5)

- a. What did the surveyors from both Nepal and China agree on to come up with about Mt. Everest?
- b. Why did both countries determine to carry out the new measurement of Mt. Everest?
- c. Which sentence in the text indicates that it was the first time for Nepal to measure the height of Mt. Everest?
- d. Why did the Nepali team take 3:00 as a reference in measuring the summit?

e. What covered the parts of the base camp at the mountains during 2015 earthquake?

2. Write short answers to the following questions. (5×2=10)

a. Why is the speaker saying that 'the children are the most beautiful flowers of all'? (The Selfish Giant)

b. What were the circumstances that led to Aksionov's imprisonment? (God Sees the Truth)

c. What is the speaker's attitude toward war? (The Gift in War Time)

d. What do you think is the main idea of the essay 'What is Poverty'? Is the main idea of the essay explicit or implicit?

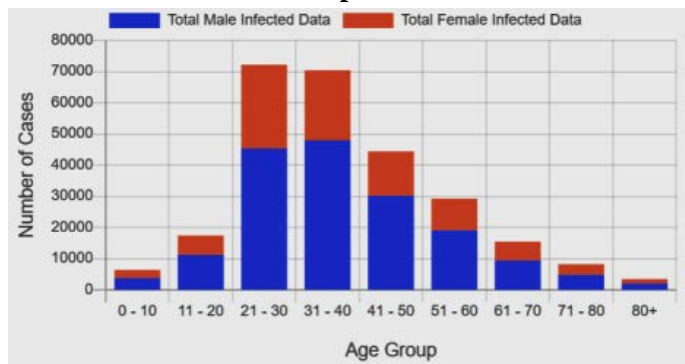
e. Why are Don Gonzalo and Laura annoyed with each other? (A Sunny Morning)

3. Write long answers to the following questions. (2×5=10)

a. Jobs contends that you need to love what you do in order to be great at it. Do you agree or disagree? Why? (How to Live Before You Die)

b. Write the summary of the poem 'All the World's a Stage'.

4. The following bar graph shows the total cases of COVID-19 infection in Nepal from 2020-01-01 to 2021-01-20. Write an interpretation of it in about 150 words. 7



5. Suppose you are the coordinator of the organizing committee for the 'Sports Week' at your school. Write an email inviting the other members of the committee for its first meeting. 8

6. Is the use of smart phones useful for the students of secondary level? Write an essay discussing the advantages and disadvantages of smart phones in about 300 words. 10

7. Do as indicated in brackets and rewrite the sentences. (10×1=10)

a. The good boy behaved well. (Underline the adverb in the sentence)

b. Many of the houses in this neighbourhood (don't/doesn't) have garages. (Choose one form from the bracket to complete the sentence)

c. We insist punctuality in this office. (Put the correct preposition in the blank)

d. It be Anton's car. I saw him driving the car yesterday. (Put the correct modal in the blank to complete the sentence)

e. She (write) three books and she is working on another one. (Put the verb from the bracket in correct tense to make a meaningful sentence)

f. I need to stop (doing/to do) my homework late at night. I keep making terrible mistakes. (Choose one form from the bracket to complete the sentence)

g. The minister stood still the request to take her seat. (Put the correct conjunction in the blank to complete the sentence)

h. Marie Curie is the woman. She discovered radium. (Join the sentences with a relative pronoun)

i. She said, "Would you like me to help you?" (Use the reporting verb offer to change the sentence into indirect speech)

j. I hate people laughing at me. (Change into passive)

8. Do as instructed. (5×1=5)

a. The art of producing beautiful writing with a special pen or brush is called calligraphy. What word class does the underlined word in the sentence belong to?

- b. Arrange the following words as per the order in a dictionary: chanting, chopper, chirruping, chivalry, chancellor
- c. What does the sentence 'He burnt his fingers by interfering in his neighbour's affair.' mean?
- i. He got himself into trouble. ii. He burnt himself?
iii. He got himself insulted. iv. He got rebuked.
- d. What does the prefix 'under-' in the word UNDERESTIMATE mean?
- i. below ii. in iii. around iv. above
- e. Which of the following sentences is correct?
- i. Kelsey said I want to go to Aunt Joy's for Thanksgiving.
ii. Kelsey said, "i want to go to Aunt Joys for Thanksgiving."
iii. Kelsey said, "I want to go to Aunt Joy's for Thanksgiving."
iv. Kelsey said "I want to go to Aunt Joys for Thanksgiving."

Model Questions – 1

1. Read the text and do the tasks.

15

The way people greet one another reflects their custom. It gives insight into their history and values. There is a wide range of greetings around the world. These range from the common handshake to other strange rituals found in some countries.

In some Eastern countries, including Korea and Japan, bowing is the traditional greeting. In Japan, it is accepted that the deeper the bow, the deeper the respect shown. In Nepal and India, People bend or nod and say Namaste or Namaskar joining palms together as if praying. Handshakes are also popular in Japan, Nepal and India. In Tibet, people opt to stick out their tongue to greet others which may seem strange to us.

In the United States, people shake hands firmly and make direct eye contact. It means a simple handshake is the normal greeting there. Shaking a person's right hand while looking him or her in his or her eyes is the usual method. Handshakes are also common in other parts of the world, including Canada, Britain and Russia. When Canadian's first meet, they often shake hands and introduce themselves by stating their name. In Russia males grasp other men's hands very strongly during the handshake. Similarly, most people in Newzealand greet each other by shaking hands. However, the native Maori people of that country display more physical contact: they press their noses together in a sign of trust and closeness.

In other countries, such as France and Belgium, hugging and kissing are more common when two people meet. In those cultures, people kiss each other on the cheeks. The number of times varies depending on the particular country. In Saudi Arabia, men might hug and kiss each other (but not a woman) on the cheek. Men also shake hands with other men there.

Thus, greetings vary from culture to culture and the place to place where they live. These cultures teach us how to assimilate in a society. It also helps us to know each other's way of life. Moreover, learning about other's culture can be a reliable tool for keeping peace and social harmony.

A. Answer the following questions.

[5×1 = 5]

- a. How do the Russians greet each other?
b. What do greetings reflect?
c. What is the significance of understanding other's culture?
d. What are the ways of greeting people in the USA, Canada and Japan?
e. Supply a suitable title to the text.

B. Choose the best answer.

[5×1 = 5]

- i. Which of the following is true?
- a. People in Russia, but not England, shake hands.
b. The number of times people kiss on the cheek varies.
c. In the past, people nodded if they weren't carrying a weapon.

- d. You shouldn't look at people when shaking their hands in the United States.
- ii. How do most people in New Zealand greet each other?
 - a. With a kiss on the cheek
 - b. By pressing noses together
 - c. With a handshake
 - d. By sticking out their tongues
- iii. How do people greet in India and Nepal?
 - a. With a handshake
 - b. By pressing noses together
 - c. With a kiss on the cheek
 - d. By saying Namaste/Namaskar
- iv. How do Saudi Arabians greet people?
 - a. Men might hug and kiss each other (but not a woman) on the cheek.
 - b. It's not proper for men to kiss women when they meet.
 - c. Women don't kiss other women when they meet.
 - d. Women can kiss men, but men can't kiss women when they meet.
- v. What is this text mainly about?
 - a. The importance of handshakes all around the world.
 - b. The origins and histories of various greetings.
 - c. The strangest types of greetings on Earth.
 - d. The wide range of greeting customs in the world.

C. Fill in the blanks with the following words. [5×1 = 5]

[Hand, bow, greeting, stick out, hug and kiss, customs]

If you are travelling to another country, you should learn a bit about itsbefore you go there. This includes getting to know the proper form of people. It can differ a lot. If you go to America, don't be surprised if someone shakes your In Japan, people mightwhen they greet. If you travel to Saudi Arab, men might each other.

2. Write short answers to the following questions. [5×2=10]

- a. How did the giant realize his mistake? (The Selfish Giant)
- b. Write the symbols used in the story and their indications. (God sees the truth but waits)
- c. How does Jonathan change as he experiences the conflicts in his life? (Civil Peace)
- d. What is hyperbole? What is refrain? Give one example of each from the poem. [A Red, Red Rose]
- e. What is the first stage in a human's life? In what sense can it be a troubling stage? (All the world's a stage)

3. Write long answers to the following questions [2×5=10]

- a. Write the summary of the play "A Sunny Morning".
- b. What are the four major problems developed by La'Pena with regard to maintain in goral tradition? Explain. [Sharing Tradition]

4. The world is suffering a lot from air pollution these days. Write an essay on mitigating measures of Air Pollution in about 300 words. 10

5. Write a letter to your friend living abroad describing your role, your teachers' role and your school administration's role to improve your studies in grade XI. 8

6. How can a person be physically fit, mentally healthy, emotionally stable and socially adoptable or adjustable? Mention few points to maintain an individuals' health and elaborate them. 7

7. Do as indicated in brackets and rewrite the sentences. 10

- a. My uncle is very lazy (Write the word class of the word 'very' in this sentence)
- b. It was raining very (heavy/heavily). (Choose adjective or adverb to fill the gap)
- c. Give an example of a homograph with appropriate definition and word class.
- d. She (write) a book but she has not published it yet. (Put the verb from the bracket in correct tense to make the given sentence meaningful).
- e. He died Covid 19. (Put the correct preposition in the blank)
- f. The car stopped suddenly. (Identify the underlined verb as transitive, intransitive or linking)

g. It might rain. Youtake an umbrella. (Choose one to fill the gap: should/had better)

h. I love people praising me. (Change in passive)

i. She said, "Happy New Year". (Change into Reported speech)

j. How do you pronounce the last 'ed' in the word 'asked' [d/t/id]? (Choose one)

8. Do as instructed.

[5×1 = 5]

a. Arrange the following words in proper alphabetical order in a dictionary.

(boy, bus, bush, brush, boss)

b. Rewrite the given sentence using 'in spite of:'

The traffic was heavy, but we got there in time.

c. Look ! The river (flow) very fast. [Put the verb in bracket in correct tense]

d. How do you pronounce the last 's' in the word 'dogs' [s/z/ iz]? [Choose one]

e. What would you suggest to your friend who has a headache? Give advice in proper structure.

Model Questions - 2

1. Read the following passage and do the tasks.

15

The outer solar system is the name of the planets beyond the asteroid belt. These planets are called gas giants because they are made up of gas and ice. The first stop of our tour is the fifth planet, Jupiter. Jupiter is bigger than three hundred Earths! It is made up of hydrogen and helium and a few other gases. There are violent wind storms that circle around Jupiter. The most famous storm is called the Great Red Spot. It has been churning for more than four hundred years already. At last count, Jupiter has sixty-three known moons and a faint ring around it too. Next in our space neighbourhood comes Saturn. It is well-known for the series of beautiful rings that circle it. They are made up of tiny bits of frozen dirt and ice. Like Jupiter, Saturn is made up of mostly hydrogen and helium. It is smaller though, at only ninety-five times the size of Earth. Saturn has sixty-two moons. The seventh planet, Uranus and its twenty-seven moons orbit very far from the sun. In addition to helium and hydrogen, Uranus atmosphere also contains ammonia ice and methane ice. It is a very cold planet, with no internal heat source. One of the strangest things about Uranus is that it is tipped over and orbits the sun on its side at a ninety-degree angle. The twenty-seven moons it has orbit from top to bottom, instead of left to right like our moon. The eighth planet is Neptune. Like Uranus, it is made up of hydrogen, helium, ammonia ice and methane ice. But unlike Uranus, Neptune does have an inner heat source, just like Earth. It radiates twice as much heat as it receives from the sun. Neptune's most distinctive quality is its blue colour. Most of the information we know about it came from the Voyager 2 spacecraft passing close by it in 1989. Pluto is the last and was considered a planet after its discovery in 1930. In 2006, Pluto was demoted and reclassified as a dwarf planet. Pluto exists in the Kuiper belt. That's just a fancy name for the band of rocks, dust and ice that lies beyond the gas giants. Scientists have found objects bigger than Pluto in this belt. Thus, the outer solar system has many secrets to explore.

Answer the following Questions briefly.

(5×1= 5)

(i) What is the Great Red Spot?

(ii) How small is Saturn as compared to Jupiter?

(iii) Why the moons of Uranus are peculiar?

(iv) What is Neptune's unique quality which distinguishes it from other 'gas giants'?

(v) What may have been the reason that in 2006 Pluto was demoted and reclassified as a dwarf planet?

A. Choose the most appropriate option.

(5×1=5)

(i) The two gases which make up most of Jupiter and Saturn are

(a) Hydrogen and ammonia

(b) hydrogen and methane

(c) Hydrogen and helium

(d) None of these

(ii) The Kuiper belt is an area of rocks, dust, and ice that

(a) is between Jupiter and Saturn

(b) is beyond Pluto

(c) includes Pluto

(d) surrounds Saturn's rings

- (iii) A synonym of 'faint' used in the passage is
 (a) indistinct (b) slight (c) muffled (d) unconscious
- (iv) A synonym of 'demoted' used in the passage is
 (a) break (b) keep (c) improve (d) downgrade
- (v) A synonym of 'tipped' used in the passage is
 (a) topped (b) tilted (c) poured (d) presented

B. Make your own sentences using the underlined words/phrases.

5

2. Write short answer to the following questions.

(5×2=10)

- Why do you think spring season never came to the giant's garden? (The Selfish Giant)
- What is the story about Steve Jobs' birth? (How to Live Before You Die?)
- Why did Makar disclose that he had killed the merchant? (God Sees The Truth but Waits)
- What can be relationship between "little i" and the speaker of the poem? (Who are you little i?)
- To which two things does the poet the speaker compare his love in the first stanza? (A Red, Red Rose)

3. Write long answer to the following questions?

(5×2=10)

Write the summary of the play. (A Sunny Morning)

The title of the story "Civil Peace" itself is ironical as there is little to differentiate 'civil peace' from 'civil war'. Do you think that the title of this story is appropriate or would "Civil War" have been a better title? Explain.

4. Write a couple of paragraphs on racial/caste related discrimination in our country.

7

5. Most students have difficulty in deciding what to study after high school. Did you also have this problem? Share the dilemma you had and how you decided to study the subject you have chosen.

8

6. Identify a person from your community who has worked on environmental protection. Write a story of that person incorporating the efforts s/he made to change things and attitudes of people.

10

7. Do as indicated in brackets and rewrite the sentences

(10×1=10)

- We get to the airport by 2 P.M. or else miss the flight (Use had better/should in the gap)
- He had very little time, but he offered to help. (Rewrite the sentences using in spite of)
- He was annoyed. He didn't say anything (Combine the sentences using although)
- Amrita.....(not seem) very happy at the moment.(Put the verb in correct form)
- The dog barked loudly.(Write whether the verb in the sentence transitive/intransitive /linking verb)
- Everyone one (have/has) problems in their life.
- The pair of shoes (is/are) mine.
- I can't join you at the party. I (will/am going to) be away for two weeks.
- We were drivingthe City Centre when we had an accident.

(Put the correct preposition in the blank)

j. I have never been to Japan. (Write the world class of the underlined word)

8. Do as instructed

(5×1=5)

- Choose the correct word that is similar in meaning to the underlined word.

Rupa studied Science reluctantly due to her father's pressure.

- eagerly
- unwillingly
- willingly
- enthusiastically

- Arrange the following words in alphabetical order. (Aspire, aspect, aside, assign)

- Choose the correct word. I think that rainy days in winter are (depressing/depressed.)

- Use the word 'despair' in your own sentence.

- The word 'Chronicle' means.....

- spiritual
- natural state
- written record of historical events

Model Questions – 3

1. Read the extract and answer the questions given below.

15

Marie Curie was one of the most accomplished scientists in history. Together with her husband, Pierre, she discovered radium, an element widely used for treating cancer, and studied uranium and other radioactive substances. Pierre and Marie's amicable collaboration later helped to unlock the secrets of the atom. Marie was born in 1867 in Warsaw, Poland, where her father was a professor of physics. At an early age, she displayed a brilliant mind and a blithe personality. Her great exuberance for learning prompted her to continue with her studies after high school. She became disgruntled, however, when she learned that the university in Warsaw was closed to women. Determined to receive a higher education, she defiantly left Poland and in 1891 entered the Sorbonne, a French university, where she earned her master's degree and doctorate in physics. Marie was fortunate to have studied at the Sorbonne with some of the greatest scientists of her day, one of whom was Pierre Curie. Marie and Pierre were married in 1895 and spent many productive years working together in the physics laboratory. A short time after they discovered radium, Pierre was killed by a horse-drawn wagon in 1906. Marie was stunned by this horrible misfortune and endured heart breaking anguish. Despondently she recalled their close relationship and the joy that they had shared in scientific research. The fact that she had two young daughters to be raised by herself greatly increased her distress. Curie's feeling of desolation finally began to fade when she was asked to succeed her husband as a physics professor at the Sorbonne. She was the first woman to be given a professorship at the world-famous university. In 1911 she received the Nobel Prize in chemistry for isolating radium. Although Marie Curie eventually suffered a fatal illness from her long exposure to radium, she never became disillusioned about her work. Regardless of the consequences, she had dedicated herself to science and to revealing the mysteries of the physical world.

A. Choose the best answer.

(5×1=5)

i. From the first paragraph, give a synonym for 'amicable':

- a. cunning b. friendly c. tragic d. unkind

ii. From the third paragraph, give the meaning for 'stunned':

- a. a state when someone is shocked b. without worry c. helpless d. misfortunate

iii. 'Anguish' in paragraph 3 is "Opposite to"

- a. Happiness b. Agony c. Meanness d. Pain

iv. 'Desolation' in line 22nd means:

- a. Freedom b. Liberty c. Despondency d. Permission

v. Choose the right word class of the word, "brilliant".

- a. Adverb b. Noun c. Adjective d. pronoun

B. Complete the following sentences in Not More Than Four Words referring to the passage.

(5×1=5)

a. The Curies' _____ collaboration helped to unlock the secrets of the Atom.

b. Marie had a bright mind and a _____ personality.

c. Marie Curie eventually suffered from her long exposure to radium

d. After radium was discovered Pierre was killed

e. Marie Curie was the first woman to be given..... at the world-famous university.

C. Answer the following questions:

(5×1=5)

a. What is the use of radium?

b. Why did Marie Curie become disgruntled?

c. Why did she leave Poland?

d. What made Curie fade away her desolation?

e. What is the reason behind her fatal illness?

2. Write short answers to the following questions.

(5×2=10)

a. Sketch the character of Aksionov. (God Sees the Truth.....)

b. How does Jonathan change as he experiences the conflicts in his life? Explain. (Civil Peace)

- c. Why do you think that we need to conserve our tradition? (Sharing Tradition)
 d. What were the circumstances that led Gonzalo to flee to Valencia? (A Sunny Morning)
 e. What happened when Steve Jobs was born? (How to Live Before You Die)
3. **Write long answers to the following questions.** (2×5=10)
 a. Describe the different roles that we play in our lifetime. (All the World's a Stage)
 b. Write the summary of the essay "What Is Poverty?"
4. **Write at least two/three paragraphs on any Nepali leader's/Actor's/ footballer's/businessman's success story.** 7
5. **Write a job application with complete CV for the position of Junior level clerk that has fallen vacant in your college.** 8
6. **Write an essay on "Importance of English Language in Modern Education". About 300 words.** 10
7. **Do as indicated in brackets and rewrite the sentences.** (10×1=10)
 a. Have you been to Dharan? (Adjust "ever" in this sentence)
 b. My uncle speaks (perfect/perfectly) Chinese.(Choose the correct adverb or adjective)
 c. The plane landed the runway. (Put the correct preposition)
 d. I (start) new job last week. (Put the verb into the correct form).
 e. I've got nothing to do. I'm boring/bored. (Choose the correct word)
 f. Scissors is used to have our hair cut. (Correct the sentence)
 g. Write four words using prefix- dis.
 h. It's a great film. You go and see it. (Put in 'had better' or should)
 i. He was annoyed. He didn't say anything. (Combine the sentences using -although)
 j. Dublin is my favorite city. It is the capital of Ireland. (Join these two sentences with appropriate relative clause)
8. **Do as indicated.** (5×1=5)
 a. **Arrange the following words in alphabetical order.**
 (Cheque, check, chick, checklist, change.)
 b. **Change the following adjectives into adverbs and nouns into adjectives.**
 (Cloud, Rapid, Bag, Fair)
 c. **What does the word "bickering" mean?**
 i. To insert something between other things ii. Arguing about things that are not important
 iii. To utter rapidly or unintelligibly
 d. To move slowly
 e. **Make a sensible sentence using the word "deprivation".**
 f. **What is the verb form of the adjective: 'beautiful'?**

Model Questions – 4

1. **Read the following passage and answer the following questions below:** 15
- There were so many nights when I, as a young 60% had to watch helplessly as my father verbally and physically abused my mother. I can still recall the smell of alcohol, see the fear in my mother's eyes and feel the hopeless despair that comes when we see people we love hurting each other in incomprehensible ways. I would not wish that experience on anyone, specially not a child. If I dwell on those memories, I can feel myself wanting to hurt my father back, in the same ways he hurt my mother, and in ways of which I was incapable as a small boy. I see my mother's face and I see this gentle human being whom I loved so much and who did nothing to deserve the pain inflicted on her. When I recall this story, I realize how difficult the process of forgiving truly is. Intellectually, I know my father caused pain because he himself was in pain. Spiritually, I know my faith tells me my father deserves to be forgiven as God forgives us all. But it is still

difficult. The traumas we have witnessed or experienced live on in our memories. Even years later they can cause us fresh pain each time we recall them.

A. Choose the correct meaning of the underlined word as used in the sentence. (5×1=5)

- a. My father verbally abused me.
 - i. angrily
 - ii. in words
 - iii. symbolically
 - iv. formally
- b. I can still recall that event.
 - i. cancel
 - ii. resemble
 - iii. abort
 - iv. remember
- c. We see people we love hurting each other in incomprehensible ways.
 - i. unlimited
 - ii. un intelligible
 - iii. understandable
 - iv. impossible
- d. She did nothing to deserve the pain inflicted on her.
 - i. imposed
 - ii. caused
 - iii. force
 - iv. thrusts
- e. We have witnessed the trauma.
 - i. injury
 - ii. mentality
 - iii. upset
 - iv. disorderly behavior

B. Fill in the blanks with the correct word from the passage. (5×1=5)

- a. I still _____ my early childhood days.
- b. People _____ in their homes.
- c. I lay _____ on the bed as I was sick.
- d. You have to follow the _____ in this experiment.
- e. He _____ appreciation for his hard work.

C. Answer the following questions. (5×1=5)

- a. What did the speaker watch helplessly?
- b. What was the speaker's reaction when his father hurt his mother?
- c. What is the most difficult thing for the speaker?
- d. What does his faith remind him?
- e. What things remain in our memories?

2. Answer the following questions briefly. (5×2=10)

- a. What is the main theme of the story "The selfish Giant"?
- b. Describe the portrait that the narrator saw in the room. (*The oval portrait*)
- c. Describe Assignor's character (*God sees the Truth*)
- d. What was the boy afraid of while walking across the carpet (*The wish*).
- e. What is the cause of suicide of Jean? (*Two Little Soldiers*)

3. Answer the following questions in detail. (2×5=10)

- a. Summarize the play "A funny morning".
- b. What does the writer need and demand in the essay "what I require from life?"

4. Write an article for a national daily on the status of women in Nepalese society. 5

5. Write an essay on Garbage management in Nepal. 8

6. Write a film review that you have recently watched. 10

7. Do as instructed. (10×1 = 10)

- a) We enter into the school by 6 am or else we may miss the exam (*should/had better*)
- b) It was too hot. We still went to the rally. (*Join the sentences with 'although'*)
- c) The woman was not very helpful. We worked under her. (*Join the sentence with appropriate relative clause*)
- d) Make a sentence using 'give up'.
- e) He went school reluctantly due to his father's pressure.
- f) You are lonely (*make a wish*)
- g) He kicked the dog (is it transitive/intransitive verb)
- h) She wrote a letter (change into passive)
- i) She lost her i-phere (*make a regret*)
- j) Rama said, "congratulation Arjun" (change into Reported Speech)

8. Do as instructed.

(5×1=5)

- a. Arrange the following words in alphabetical order. (day, daybreak, dash, damn)
- b. How is last 's' is pronounced in the word 'dogs' (|s|, |z|, |iz|)?
- c. Make a sentence using the word 'destined'.
- d. Bikki has (gone/been) to Canada. He may come back next year (choose one).
- e. Which letter is silent in the word 'handkerchief' while pronunciation?

Model Questions – 5

1. Read the following passage and answer the following questions below:

15

The world's population is expected to stabilize at around nine billion. Is it possible for nine billion people to have the lifestyle enjoyed today only by the wealth? One school of thought says no: not only should the majority of the world's people resign themselves to poverty forever, but rich nations must also revert to simplex lifestyles in order to save the planet.

Admittedly, there may be political or social barriers to achieving a rich world. But in fact there seems to be no insuperable physical or ecological reason why nine billion people should not achieve a comfortable lifestyle, using technology only slightly more advanced than that which we now possess. In thinking about the future of civilization we ought to start by asking what people want. The evidence demonstrates that as people get richer they want a greater range of personal technology, they want lots of room (preferably near in natural surroundings) and they want greater speed in travel. More possessions more space, more mobility.

In the developed world, the personal technology of the wealthy, including telephones, washing machines and cars, have become necessities within a generation or two increasing productivity that results in decreasing costs for such goods has been responsible for greatest gains in the standard of living and there is every reason to believe that this will continue.

With rising personal incomes come rising expectations of mobility. This is another luxury of today's rich that could become a necessity of tomorrow's global population particularly if its members choose to live widely dispersed in a post-agrarian wilderness. In his recent book free flight, James follows a pilot as well as a writer, describes serious attempts by both state and entrepreneurs in the USA to promote an 'air taxi system within the price range of today's middle class and perhaps tomorrow's global population.

Two of the chief obstacles to the science fiction Fantasy of the personal plane or hover care are price and danger. While technological improvements are driving prices down, piloting an aircraft in three dimensions is still more difficult than driving a car in two and pilot error causes more fatalities than driver error. But before long our aircrafts and cars will be piloted by computers which are never tired or stressed. So perhaps there are some grounds of optimism when viewing the future of civilization with the help of technology, and without putting serious strains on the global environment, possessions, space and mobility can be achieved for all the projected population of the world.

A. Do the following statement reflect the claims of the writer in the passage, Write:

(5×1=5)

Yes, if the statement agrees with the view of the writer.

No if the statement contradicts the view of the writer.

Not given if it is impossible to say what the writer thinks about this.

- i. Today's wealthy people ignore the fact that millions are living in poverty.
- ii. People will want more range of personal technology as they get wealthier.
- iii. 'Air taxi' system is used currently in USA only.
- iv. Price and danger are two hindrance of 'air taxi'.
- v. Possessions, space and mobility can be achieved with the help of technology in near future.

B. Fill in the blanks with most appropriate word from the passage.

(5×1=5)

- i. Everyone is attracted by the _____ of actors of film industry.
- ii. There are no _____ to prove that he is guilty.

- iii. My parents have great _____ from me.
- iv. The spider made several _____ before it succeeded to climb the wall.
- v. The number of _____ caused by accidents has recently increased.

C. Answer the following questions. (5x1=5)

- i. What should people of rich nation do to save the planet?
- ii. What happens when people get richer?
- iii. What does James describe in his book?
- iv. What are the two major hindrance of air taxi?
- v. What can be achieved with the help or technology?

2. Answer the following questions briefly. (5x2=10)

- a. What is the relationship between the portrait painter and its subject? (The Oval Portrait)
- b. What motivated and encouraged the child to start and continue on his journey? (The wish)
- c. What can be the relationship between 'Little i' and the speaker of the poem? (Who are you, little i'?)
- d. What is poverty according to Parker? (what is Poverty)
- e. What is the final judgments an WaserkopF's refund? (Refund)

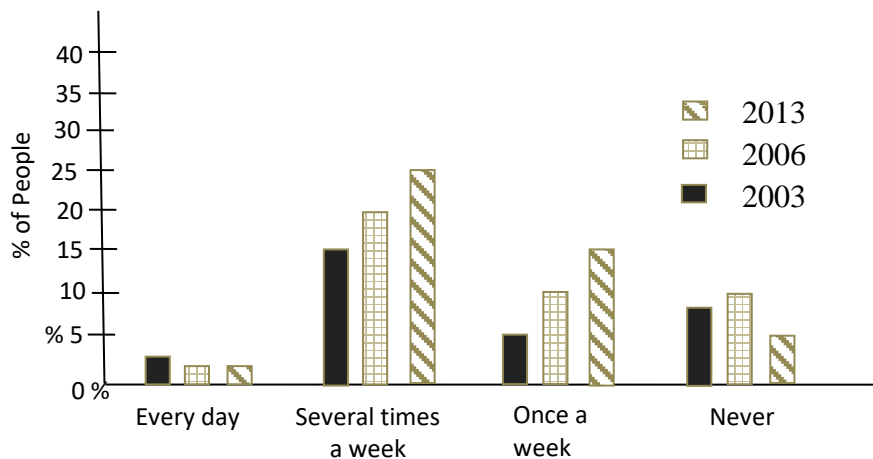
3. Answer the following questions in detail. (2x5=10)

- a. What does Jonathan mean by his expression 'Nothing puzzles God?' What does this expression reveal about his character? Explain by citing details from the story? (Civil peace)
- b. Literary devices are tools that enable the writer to present their ideas, emotions and feelings and also help the readers understand those more profound meanings. Analyse the poem Red Rose in terms of the literary devices such as simile, symbolism imagery, alliteration and assonance.

4. Suppose you are the secretary of the National innovation centre (NIC), Nepal and an innovator from a foreign country had a talk with its chairperson, Mahabir Pun about bilateral cooperation. Write a prem release statement.

6. Interpret the information given in the following chart.

Frequency of eating at fast food restaurants among people in the USA (2003 - 2013).



6. Write a travelogue of your recent visit to a natural/religious place in about 300 words. Use the following clues.

Local costumer & traditions - cuisine - depiction of place of interest, local history and culture - your adventure - prices & transportation - Entertainment.

7. Do as indicated in brackets and rewrite the sentences. (10x1 = 10)

- a) Alas; She is dead. (*Underline the interjection in the sentence*).
- b) The Frightened deer disappeared _____ the forest (*Add preposition*).
- c) A number of my friends _____ (*love*)
- d) He painted a picture. (*Underline the verb and state whether it is transitive illustrative or linking verb*)
- e) I think you _____ learn English to enroll a university course (*had better/should*).
- f) Hark bought the watch. It was expensive. (*Combine the sentences with despite*)

- g) I'm sure he's not going to the Cinema today. (*Rewrite the sentence using may/might or must or can't.*)
- h) They elected him president. (*Divide into different parts: sub, verb, object, adverbial, complement*)
- i) They said, "Hurray! We've won the match." [into indirect speech].
- j) She likes people taking her photograph. (*into passive voice*).

8. Do as instructed.

(5×1=5)

- a. Is he repairing the bicycle? What word class do the underlined words belong to ?
- b. Arrange the following in alphabetical order terminal, terminate, termite, terrace, terrible.
- c. Find the number of syllabus in the following words.
 - i) prompt ii) pronunciation
- d. Write the meaning of Indians when life gives you lemon and make one meaningful sentence.
- e. Put three verbs in the correct box.

killed	visited	picked	missed
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t	d	id

Model Questions – 6

1. Read the following passage and answer the following questions below:

15

Personally, I had the chance to meet many immigrants who were all willing to integrate in the Swedish and Spanish societies where they live. Admittedly, there are many constraints at play, but these constraints are not related to any loss of identity. In fact, Western societies' creation of immigrant enclaves enables neighbors to share similar identities, cultures, language and perhaps even religion. This, however, has a negative effect in the long run, and it will be the second generation and the government who in the end will pay dearly. Integration programs do not fail because immigrants are unwilling to be part of the new society, but because society does not open its doors fully to allow them to integrate. Full integration could be costly at first, but at the end of the day, it is an investment in the future. Currently, many schools in Sweden are teaching Arabic as a second language for immigrants and provide students with halal food. Any argument about loss of identity in the West does not have a solid foundation.

Countless benefits come from integrating into society. It means that people will focus more on economic opportunities rather than concentrating their efforts on lamenting a so-called identity crisis. And it means they will become sensitized to the norms and standards of the new society – its garbage collection, its traffic lights, its Highway Code etc. – and start to adopt new ways of thinking. The new generation will have the opportunity of boarding the ship of civilization and development that Arabs have lost a long time ago. They will have equal opportunities in learning, engagement and self-esteem. Afterwards, they can be a solid bridge between the two cultures or religions – of course, with mutual understanding.

- A. Choose the correct meaning of the underlined word: [5 x 1 = 5]
 - a. Immigrants are willing to integrate into the society.

i. join	ii. rule	iii. mingle	iv. force
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 - b. There is a mutual understanding.

i. shared	ii. mingled	iii. devoted	iv. honored
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 - c. The foundation is very strong.

i. height	ii. root	iii. groundwork	iv. basis
-----------	----------	-----------------	-----------
 - d. They had many constraints in the company.

i. purchases	ii. dominions	iii. suppressions	iv. obstacles
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 - e. You shouldn't go on lamenting about your mistakes.

i. mourning	ii. regretting	iii. chatting	iv. complaining
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- B. Fill in the blanks with the correct form of the word from the passage: [5 x 1 = 5]
 - i. I talked about my problems with the teacher

- ii. We can have many in life.
- iii. We can solve this by Understanding.
- iv. Immigrants have to face identity in a foreign country.
- v. My computer is of tenth

C. Answer the following questions: [5 x 1 = 5]

- i. What are the advantages of integrating into society?
- ii. How does the creation of immigrant enclaves help others?
- iii. Why do integration programs fail?
- iv. What were the immigrants willing to do, according to the speaker?
- v. How will the new generation of Arabs benefit from integration?

1. Write short answers to the following questions: [5 x 2 = 10]

- a. Why did the astrologer live in fear? (An Astrologer's Day)
- b. According to Parker, what is poverty? (What Is Poverty?)
- c. What does the speaker promise at the end of the poem? Why do you think the speaker does this? (The Gift in Wartime)
- d. Do you believe Mrs. Wright killed her husband? (Trifles)
- e. Do you think Luc is a betrayer of friendship? (Two Little Soldiers)

2. Write long answers to the following questions:

- a. Summarize the story "God Sees the Truth, But Waits". 7
- b. Draw the character sketch of Jonathan Iwegbu. How would you describe the civil peace in Nigeria? (Civil Peace) 10

4. Suppose you are a Spoke person of Buddha Air. Write a press release about flight cancellation in eastern terai due to heavy rainfall. 7

5. Discuss the impacts of globalization on the process and progress of education in Nepal. 10

6. Write a review of a book/film you have recently read or watched. 8

7. Do as directed in brackets and rewrite the sentences: [10 x 1 = 10]

- a. Hiswas excellent. (write the noun form of 'pronounce')
- b. Is heheir to the throne? (a/an/the/no article)
- c. He said, "I didn't want to go to the party yesterday." (Change into Indirect Speech)
- d. You couldn't attend your friend's birthday party. (express your *regret* using 'I wish/If only')
- e. If only I have a good job. (correct the sentence)
- f. Some tribes worship their gods before they (prey/pray)
- g. Mahesh forgets closing the windows. (tend) (Rewrite it by using the verb in the bracket)
- h. They made a horrible decision which caused damage to our company. (hopeless/ inflexible/irreparable)
- i. someone forced to leave the country in order to escape war, persecution or natural disaster (r.....)
- j. She/live in Kathmandu? (Rewrite it using 'used to')

8. Do as instructed: [5 x 1 = 5]

- a. Could you me your book, please? (borrow/lend)
- b. A fat man was leading us. (change into passive voice)
- c. She usually wears glasses. (divide the sentence into different parts)
- d. A: When (you/arrive)?
B: At 10 pm last night.
- f. Perhaps he had a car. (Rewrite using 'may/might/can't/must')

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

1. Read the following text and answer the questions:

The art of living is learnt easily by those who are positive and optimistic. From humble and simple people to great leaders in history, science or literature, we can learn a lot about the art of living, by having a peep into their lives. The daily routines of these great men not only reveal their different, maybe unique life styles, but also help us learn certain habits and practices they followed. Here are some; read, enjoy and follow in their footsteps as it suits you.

A private workplace always helps. Jane Austen asked that a certain squeaky hinge should never be oiled so that she always had a warning whenever someone was approaching the room where she wrote. William Faulkner, lacking a lock on his study door, detached the doorknob and brought it into the room with him. Mark Twain's family knew better than to breach his study door—they would blow a horn to draw him out. Graham Greene went even further, renting a secret office; only his wife knew the address and the telephone number. After all, everyone of us needs a workplace where we can work on our creation uninterruptedly. Equally we need our private space too!

A daily walk has always been a source of inspiration. For many artists, a regular stroll was essentially a creative inspiration. Charles Dickens famously took three hour walks every afternoon, and what he observed on them fed directly into his writing. Tchaikovsky could make do with a two-hour jaunt but wouldn't return a moment early; convinced that doing so would make him ill. Ludwig van Beethoven took lengthy strolls after lunch, carrying a pencil and paper with him in case inspiration struck. Nineteenth century composer Erik Satie did the same on his long hikes from Paris to the working-class suburb where he lived, stopping under street lamps to jot down ideas that came on his journey; it's rumored that when those lamps were turned off during the war years, his music declined too. Many great people had limited social life too. One of Simone de Beauvoir's close friends puts it this way. 'There were no receptions, parties. It was an uncluttered kind of life, a simplicity deliberately constructed so that she could do her work'. To Pablo the idea of Sunday was an 'at home day'.

The routines of these thinkers are difficult. Perhaps it is because they are so unattainable. The very idea that you can organize your time as you like is out of reach for most of us, so I'll close with a toast to all those who worked with difficulties. Like Francine Prose, who began writing when the school bus picked up her children and stopped when it brought them back; or T.S. Eliot, who found it much easier to write once he had a day job in a bank than he had as a starving poet and even F. Scott Fitzgerald, whose early books were written in his strict schedule as a young military officer. Those days were not as interesting as the nights in Paris that came later, but they were much more productive and no doubt easier on his liver. Being forced to follow someone else's routine may irritate, but it makes it easier to stay on the path. Whenever we break that trail ourselves or take an easy path of least resistance, perhaps what is most important is that we keep walking.

A. Answer the questions given below by choosing the most appropriate option.

(5×1=5)

i. The passage is about:

- a. how to practise walking.
- b. walking every day
- c. what we can learn from the routines of geniuses.
- d. the life of geniuses.

ii. The writers in the past:

- a. followed a perfect daily routine.
- b. enjoyed the difficulties of life.
- c. can teach us a lot.
- d. wrote a lot in books.

iii. In their daily routines:

- a. they had unique life styles.
- b. they read books and enjoyed them.
- c. they did not get any privacy.
- d. they did not mind visitors.

iv. Some artists resorted to walking as it was:

- a. an exercise.
- b. a creative inspiration.
- c. essential for improving their health.
- d. helpful in interaction with others.

v. To Pablo, the idea of Sunday was an:

- a. at home day.
- b. off day.
- c. at a mall day.
- d. at friend's place day.

- B. Find words from the passage which mean the same as the following.** (5×1=5)
- i. noisy (para. 2) ii. a short leisurely walk (para. 3) iii. not achievable (Para 4)
 iv. modest (para.1) v. knowingly(para.3)
- C. Answer the following questions briefly:** (5×1=5)
- i. How can we learn the art of living?
 ii. Who were the three authors who had private workspaces?
 iii. How did the family of Mark Twain use to draw him out of his workplace?
 iv. Which style did the famous composer Erik Satie follow?
 v. During which time did Francine Prose use to write?
- 2. Write short answers to the following questions.** (5×2=10)
- a. What was the boy afraid of while walking across the carpet? (The Wish)
 b. What is the last stage in a human's life? In what sense can it be a troubling stage? (All the World's a Stage)
 c. What were the circumstances that led Gonzalo to flee Valencia? (A Sunny Morning)
 d. To which two things does the poet, the speaker, compare his love in the first stanza? (A Red, Red Rose)
 e. According to Haldane, what are the four general human needs? (What I Require from Life?)
- 3. Write long answers to the following questions.** (2× 5=10)
- a. How does an epidemic differ from pandemic? Based on the poem, briefly explain the impact of Corona Virus on human life and environment. (Corona Says)
 b. Write a good summary of the story "The Selfish Giant".
- 4. Write an essay discussing the advantages and disadvantages of social media in about 300 words.** 10
- 5. Do you think there is racial / caste related discrimination in your country? Write a speech about 'Racial and caste related discrimination' in about 200 words.** 8
- 6. Write a review of a book/film you have recently read or watched.** 7
- 7. Do as indicated in brackets and rewrite the sentences.** (10×1=10)
- a. Weget to the airport by 2 P.M. or else we'll miss the flight. (Use had better/should in the gap)
 b. The dog barked loudly.(Write whether the verb in the sentence is transitive/intransitive /linking verb)
 c. Everyone (have/has) problems in their life.
 d. I can't join you at the party. I (will/am going to) be away for two weeks.
 e. We were drivingthe City Centre when we had an accident. (Put the correct preposition in the blank.)
 f. I have never been to Japan. (Write the word class of the underlined word.)
 g. It be Anton's car. I saw him driving the car yesterday. (must/can't/sure to)
 h. I need to stop (doing/to do) my homework late at night. I keep making terrible mistakes. (Choose one form from the bracket to complete the sentence.)
 i. I hate people laughing at me. (Change into passive.)
 j. I am going toUSA this autumn. (Put a suitable article.)
- 8. Do as instructed.** (5×1=5)
- a. Choose the correct synonymous word for 'exasperatedly'. (pleasingly/calmly/annoyingly)
 b. Write the correct word class/part of speech of the word 'frontier'.
 c. Arrange the following words in alphabetical order. (Terror, Termite, Terrible, Terminal)
 d. How do you pronounce the last 'ed' in the word 'asked' [d/t/id]? (Choose one)
 e. Choose the correct word from the bracket.
 Could youme your book, please? (borrow/lend)

NEB Examination - 2079

Time: 3 hour

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

1. Read the following passage and answer the given questions below:

The world's highest mountain Mount Everest is 0.86m higher than had been previously officially calculated, Nepal and China have jointly announced. Until now the countries differed over whether to add the snow cap on top. The new height is 8,848.86m (29,032 ft). China's previous official measurement of 8,844.43m had put the mountain nearly four metres lower than Nepal's. Everest Officials at Nepal's foreign ministry and department of survey said surveyors from both countries had co-ordinated to agree on the new height. The agreement to jointly announce the new measurement of the Earth's highest point was made during Chinese President Xi Jinping's visit to the Nepalese capital, Kathmandu last year.

Chinese authorities had said previously Mount Everest should be measured to its rock height, while Nepalese authorities argued the snow on top of the summit should be included. The Chinese surveyors had calculated their figure after they measured the mountain in 2005. Nepal's government officials told the BBC in 2012 that they were under pressure from China to accept the Chinese height and therefore they had decided to go for a fresh measurement to "set the record straight once and for all". The 8,848m height, Nepal had been using for Mount Everest was determined by the Survey of India in 1954, but for the first time the country has now conducted its own measurement of the summit. Four Nepalese land surveyors spent two years training for the mission, before heading to the summit. "Before this, we had never done the measurement ourselves," Damodar Dhakal, spokesman at Nepal's department of survey, told the BBC. "Now that we have a young, technical team [who could also go to the Everest summit], we could do it on our own," Mr. Dhakal said. Nepal's lead surveyor Khimlal Gautam lost his toe due to frostbite while on the summit to install height-measuring equipment last year. "For summiteers, scaling the highest peak means a great accomplishment. For us, it was just the beginning," Mr. Gautam had told BBC Nepali after his return. "Unlike other surveys of the Everest in the past, we chose 03:00 to minimise errors that could have been caused because of sunlight in the day time."

Some geologists have suggested a major earthquake in 2015 may have had an impact on Mount Everest's height. The 7.8 magnitude earthquake killed nearly 9,000 people in Nepal, and caused an avalanche which buried parts of the base camp at the mountain. At least 18 20 climbers were killed. Some geologists said the earthquake may have caused Everest's snow cap to shrink. Scientists had found that some other Himalayan peaks such as Langtang Himal, mostly to the north of Kathmandu and close to the epicentre, had reduced in height by approximately a metre after the earthquake. Others have argued that Mount Everest, like other Himalayan peaks, may have actually grown over time because of the shifting tectonic plates it sits on. But experts say major earthquakes can result in that process is being reversed. "The 2015 earthquake is also a major reason why we re-measured the mountain," said Mr. Dhakal.

Questions:

A. Choose the best answer.

(5×1=5)

- a. The word 'announce' in the 8th line means:
 - i. utter words to convey information.
 - ii. make a formal statement about a fact.
 - iii. communicate information to someone.
- b. The word 'fresh' in the phrase 'fresh measurement' in the 17th line means:
 - i. having its original qualities unimpaired.
 - ii. not frozen, tinned or otherwise preserved.
 - iii. not previously done, new or different.
- c. The word 'accomplishment' in the 28th line means:
 - i. the omission of expected action.
 - ii. an act or instance of falling.
 - iii. something that has been achieved successfully.
- d. The word 'shrink' in the 27th line is opposite in meaning to:

- i. expand. ii. contract. iii. reduce.

e. The word 'approximately' in the 30th line means:

- i. exactly. ii. nearly. iii. precisely.

B. Complete the following sentences in NOT MORE THAN FOUR WORDS. (5x1=5)

- a. Nepal and China previously had different views about adding the to the height of Mt. Everest.
- b. Surveyors from both Nepal and China had worked together to come up with the same view on the of Mt. Everest.
- c. China's earlier official measurement of 8844.43m was based on the measurement done in
- d. The team leader of Nepal's surveyors lost his toe during the installment of on the top.
- e. Some geologists also had their view that the change in under Mt. Everest may have increased its height.

C. Answer the following questions. (5x1=5)

- a. What did the surveyors from both Nepal and China agree on to come up with about the height of Mt. Everest?
- b. Why did both countries determine to carry out the new measurement of Mt. Everest?
- c. Which sentence in the text indicates that it was the first time for Nepal to measure the height of Mt. Everest?
- d. Why did the Nepali team take 3:00 as a reference in measuring the summit?
- e. What covered the parts of the base camp at the mountains during 2015 earthquake?

2. Write short answers to the following questions. (5x2=10)

- a. How did the giant realize his mistake? (*Selfish Giant*)
- b. Why was Aksionov imprisoned? (*God Sees the Truth but Waits*)
- c. What does the speaker mean when it says '*The earth is not your property alone*'? (*Corona Says*)
- d. To which two things does the speaker compare his love in the first stanza? Describe. (*A Red, Red Rose*)
- e. Why do both Don Gonzalo and Dona Laura not reveal their true identities? (*A Sunny Morning*)

3. Answer the questions in detail. (2x5=10)

- a. Summarize the story 'An Astrologer's Day'. (*An Astrologer's Day*)
- b. How should we live before we die, according to Steve Jobs? (*How to Live Before You Die*)

4. Write an email to your foreign friend recommending to visit an interesting place of Nepal. [7]

7. Write a letter to the editor of a national newspaper explaining any two serious interrelated environmental problems of Nepal and present some solutions. [8]

6. Write an essay on 'Science: a blessing or a curse?' [10]

7. Do as indicated in the brackets and rewrite the sentences. (10x1 = 10)

- a. Advance, analysis, amuse, allergy (*Arrange the words in alphabetical order.*)
- b. The man with all his children lives in Kathmandu. (*Correct the sentence if necessary*)
- c. He was annoyed. He didn't say anything. (*Join the sentences using 'although'*)
- d. He is a musician. His albums have sold millions. (*Join the sentences with appropriate relative clause.*)
- e. You live in a crowded city. (*Make a wish using 'I wish/If only*)
- f. I'm sure he's not going to the cinema today. (*Rewrite the sentence using must/can't.*)
- g. My grandfather/live/ in Kathmandu (*Rewrite the sentence using 'used to' form.*)
- h. I haven't read the text thoroughly, but given a (fast/quick/rapid) glance. (*Choose the correct option.*)
- i. She said to me, "We lived in China for five years." (*Change into reported speech.*)
- j. Some students study grammar on the internet. (*Change into passive voice*)

8. Do as instructed. (5x1=5)

- a. Did you give him any (advice/advise) for his career? (*Choose the correct word.*)
- b. Make a sentence using the idiom '*a hot potato*'.
- c. Paraphrase the sentence using the word in the brackets. Ashika is worried about her exam. (*seem*)
- d. The man will buy a pen next week. (*Divide the sentence into different parts.*)
- e. Write the number of syllables in the following words: *Children Pronunciation.*

NEB Examination - 2080

Time: 3 hour

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

1. Read the following passage and answer the given questions below:

15

Jennifer M. Gidley's book *Post formal Education* (2016) explains why the current education model, which was developed in the 19th century to meet the needs of industrial expansion, is obsolete. It points to the need for a new approach to education designed to prepare young people for global uncertainty, accelerating change and unprecedented complexity. It argues that we need to fundamentally change our ways of thinking, and our ways of educating children and young people.

The challenges we face as human beings at the beginning of the 21st century are often intractable and increasingly "planet-sized". The overwhelming issues of global climate crisis, growing economic disparity, mass migration and the youth mental health epidemic reveal how dramatically the current education model has failed students, educators and global society as a whole, in that education is the bedrock of society and culture.

While so much has changed out of all recognition in the last hundred years, the institution of formal schooling still resembles the factory schools built to provide human fodder during the Industrial Revolution. Fundamentally, we are still educating our children as if we were living in the 19th century, albeit with a few added digital gadgets and online infotainment.

Furthermore, the type of thinking believed until the mid-20th century to be the highest form of thinking—what Jean Piaget called formal operations—is now known to be succeeded by other stages. Adult developmental psychologists in the USA have for decades been providing evidence that mature adult humans can develop higher-order reasoning than formal operations. They call this capacity: post formal reasoning.

Readers will learn about the impact on young people of both the global-societal challenges we face as a species and the failure of formal schooling to prepare them to meet those challenges. Our current ways of thinking, educating and running the world have left many young people depressed, with a loss of meaning, a sense of spiritual vacuum and feelings of disenchantment with the world they are inheriting.

By reading this book, educators and others will become aware of the limitations of formal reasoning in addressing complex, systemic challenges. They will begin to appreciate the more complex, nuanced and paradoxical features of post formal reasoning and how such reasoning will help us to meet future planetary challenges with courage, imagination, wisdom, rather than relying on techno-fixes.

This book is not for the faint-hearted or those wanting to tinker with the edges of the outmoded schooling model. It raises a planet-wide call to deeply question how we actually think and how we educate. It charts a course towards a post formal education philosophy based on the most advanced and most significant developmental psychology and education research—as a foundation for educational futures. A key question explored in this book is this: "If higher-order, more complex forms of cognition do exist, then how can we better educate children and young people so that more mature forms of reasoning appear at the appropriate life stage?" Put simply, we cannot solve tomorrow's problems with yesterday's thinking. (<http://www.springer.com/series/13431>)

A. Fill in the blanks with the underlined words from the passage:

[5x1=5]

- At present, the use of post office to send personal letters has almost become
- The most importantthat changed the political system of Nepal was against Rana rules.
- Smart mobiles, laptops, internet, etc. are providing to the modern generation.
- Modern generation cannot be taught for the future using teaching methods or pedagogy.
- She is in due to the loss of her new iphone.

B. Write 'True', 'False'. Or 'Not Given'.

[5x1=5]

- Present world is uncertain, changing and complex.
- There are less challenges and crises in the present century in comparison to the 19th and 20th century.
- Modern kids can develop post formal reasoning more than old generation.
- Our existing ways of thinking and educating have left many young people depressed.
- We cannot better educate children and young people with old pedagogy if higher-order, more complex forms of cognition exist.

- C. Answer the following questions in brief:** **[5x1=5]**
- What is the main argument of the book 'Postformal Education'?
 - What are the major challenges of education system of 21st century?
 - According to the author, how are the institutions of formal schooling educating the children?
 - What will the readers learn by reading the book 'Postformal Education'?
 - What do you mean by "we cannot solve tomorrow's problems with yesterday's thinking"?

- 2. Answer the following questions briefly:** **[5x2=10]**
- What was the child afraid of while walking across the carpet? (The Wish)
 - What details does the astrologer give to the stranger about his past? (An Astrologer's Day)
 - What positive changes have occurred on Earth after the Speaker's visit? (Corona Says)
 - What are four major problems developed by LaPena with regard to maintaining the oral tradition? (Sharing Tradition)

OR

Explain the following line:

"Your time is limited, so don't waste it living someone else's life." (How to Live Before You Die)

- 3. Answer the following questions in detail.** **[2x5=10]**
- Why do Dona Laura and Don Gonzalo spin fictitious stories about themselves? (A Sunny Morning)
 - What is the relation between life and art in the story "The Oval Portrait"? How is it different from the general thought about life and art? (The Oval Portrait)

OR

How do you evaluate the character of Mrs. Wright? Explain based on some symbols found in the play. (Trifles)

- What is poverty according to Parker? Explain in detail. (What is Poverty?)
- 4. Write an email to a friend from UAE inviting him/her to visit the naturally beautiful places of Nepal describing few natural and cultural heritages.** **7**
- 5. Write a brief biography of a famous person. Include the followings: Birth and childhood, career growth, major contributions and works, awards and appreciations, present situation and lessons to be learnt from his/her life.** **8**
- 6. Write an essay on "Elderly Generations: Knowledge, contributions and care".** **10**
- 7. Do as instructed:** **[10x1=10]**
- The weather is bad in November. (*Rewrite the sentence with the adverb 'always' in the appropriate place.*)
 - I went to see the film, but I it. (not/enjoy) (*Put the verb into the correct form and complete the sentence.*)
 - He was annoyed. He didn't say anything (**although**). (*Combine the sentences using the word given in brackets.*)
 - That's the stadium. Real Madrid plays there. (*Join the pairs of sentences with appropriate relative clause.*)
 - You're feeling lonely. (*Express your wish using 'I wish/If only.....'*)
 - Perhaps she knows the answer. (*Rewrite the sentence using may/might or must/can't.*)
 - The man will buy a pen next week. (*Divide the sentence into different parts.*)
 - I live in a flat when I was a child. (*Rewrite the sentence using 'used to'.*)
 - Jamila said, "I travel a lot in my job". (*Change the sentence into indirect speech.*)
 - Is he repairing the bicycle? (*Change the sentence into passive.*)

- 8. Do as indicated:** **[5x1=5]**
- He is matured. He can direct his own journey to make his career better. (*Choose the synonymous word of the underlined word.*)
 - Decipher
 - Anticipate
 - Navigate
 - Walk
 - Rita is worried about her exam. (*Paraphrase the sentence using the verb 'seem'*)
 - She is about prospects for the economic development of the country.
 - appalling
 - sanguine
 - reluctant
 - bestir
 - Make a sentence using the phrase 'pass away'.
 - Which of the following words end with /t/ sound?
 - Asked
 - Enjoyed
 - Wanted
 - Ended

NEB Examination - 2081

Time: 3 hour

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all the questions.

1. Read the following text and complete the tasks that follow.

When Adiyogi Shiva found that each one of the Sapta Rishis had grasped one aspect of the knowing and he could not find another human being who could grasp all seven **dimensions**, that is when he decided to **deposit** his knowing into Mount Kailash so that all seven dimensions of yoga, all seven dimensions of knowing the mechanics of life are preserved in one place and one source. Kailash became the greatest mystical library on the planet – a live library, not just with information, but alive! This is why in the Hindu way of life, it is said that Kailash is the Abode of Shiva. It does not mean he is still sitting up there dancing or hiding in the snow. It means he deposited his knowing there.

When a person realizes himself and his perception goes far beyond what is considered normal perception, what he has **perceived** cannot always be transmitted to people around him. Only a small part of it may be transmitted. It is very rare for any master to find people to whom he can transmit all of himself. Most masters go without ever being able to transmit what they really want to. I would say even in my life, what I am doing in terms of imparting is just 2% of what I am. If I can increase it by one percentage point before I fall dead, that's a great achievement. So where do you leave all this? You don't want this to become lost. So for thousands of years, realized beings always traveled to Kailash and deposited their knowledge in a certain energy form, using the mountain as a basis. It is because of this that South Indian mysticism always says that Agastya, who is the basis of this form of mysticism, lives in the Southern face of Kailash.

The Buddhists say three of their main Buddhas live in the mountain. The Jains say Rishabh, the first of the twenty-four Teerthankaras, lives in Kailash. He came to Kailash wanting to grasp all that is there and take it to the world. Rishabh planned a three-month trip but the three months stretched into seven years. He endlessly **gobbled** the stream of knowledge that is there. He was never satisfied. He wanted to take it all. He made a phenomenal effort, but when he tried to take all of it, it took him. That is the only way it could happen. You cannot contain it, but it can easily contain you. In my opinion, no individual human being can ever grasp all of it. It's too much. We can take quite a **substantial** amount, but not all of it. The only way to grasp it all is to become one with it. For a spiritual seeker, Kailash is like touching the **ultimate** source on this planet. For one who is in **pursuit** of mysticism, this is the place. There is no other place like this.

(Source: Shiva – Ultimate Outlaw)

A. Complete the following sentences using the words highlighted in the text. Two of these words are not necessary. [5×1= 5]

- a. He four hot dogs in three minutes.
- b. The hounds were running in the woods in of an escaped deer.
- c. She purchased her tickets at a discount.
- d. I thought I a problem, but I wasn't sure.
- e. The social of the problem must also be taken into account.

B. Read the text again and write:

TRUE if the statement agrees with the information given in the text.

FALSE if the statement contradicts the information given in the text.

NOT GIVEN if there no information in the text. [5×1=5]

- a. There is a big library with books about Yoga in Mt. Kailash.
- b. The speaker is able to transmit all his knowledge to his disciples.
- c. Teerthankara Rishabh wasn't able to take all the knowledge which was in Kailash.
- d. The speaker is a mystic and a spiritual seeker.
- e. According to the speaker, no one can grasp all the knowledge which is in Kailash.

C. Answer the following questions: [5×1=5]

- a. Why did Shiva decide to deposit his knowing into Mount Kailash?
- b. Why is Kailash said to be the Abode of Shiva?
- c. Why do many realized beings deposit their knowledge in the form of energy in Kailash?
- d. What are the claims of Buddhists and Jains about Kailash?

e. What happened to the Jain Teerthankara, Rishabh in Kailash?

2. **Answer the following questions in about 75 words:**

[5×2=10]

a. Why did Jonathan think of himself as 'extraordinarily lucky'? (*Civil Peace*)

b. Why did the astrologer advise Guru Nayak not to travel southward again?

(*An Astrologer's Day*)

OR

Why did Wasserkopf give ridiculous answers? Why did the teachers accept these answers? (*Refund*)

c. Why does the poet compare the world with a stage?

(*All the World's a Stage*)

d. How does the essayist justify that scientific research is useful for the humankind's survival?

(*Scientific Research is a Token of Human kind's survival*)

e. Do you believe that Mrs. Wright killed her husband? Give reasons. (*Trifles*)

3. **Answer the following questions in about 150 words:**

[2×5=10]

a. How did the giant learn the lesson about love and sharing? Describe the punishment and rewards he got due to his attitude. (*The Selfish Giant*)

OR

Discuss the play 'A Sunny Morning' as a light comedy. (*A Sunny Morning*)

b. Why does Corona, the speaker, say that it was invited by humans themselves? Explain the effects on humans and the environment after its arrival. (*Corona Says*)

4. **Suppose you got selected for a job. Write an email to your friend sharing your experience about how you got that job and what you have to do. (Write in about 150 words).** [7]

5. **Write a review of a film you have recently watched (in about 180 words). (Write introduction, synopsis/summary, analysis of plot and creative elements, your critical opinion, recommendation/ rating and conclusion.)** [8]

6. **Write an essay on 'Importance of Modern Agriculture and Tourism for the Development of Nepal'. (Write in about 300 words)** [10]

7. **Do as indicated in the brackets and rewrite the sentences:**

[10×1=10]

a. Ankit speaks very _____. (loud / loudly). (*Choose the correct word*)

b. The frightened fox disappeared _____ the forest. (upto /into /towards).

(*Choose the correct preposition*)

c. I don't think she (will / is going to) pass the exam.

(*Choose the correct answer*)

d. Neither my brother nor my sister (own/owns) a bicycle.

(*Choose the correct verb*)

e. Look! The river (flow) very fast. (*Put the verb into the correct form, present simple or present continuous*)

f. We (should / had better) get to the airport by 5 pm or else we may miss the flight. (*Choose the correct option*)

g. The traffic was heavy. We got there in time.

(*Join the sentences using 'Although'*)

h. Paris is my favourite city. It is the capital of France.

(*Join the sentences with appropriate relative clause*)

i. I don't like people staring at me. (*Change into passive voice*)

j. Pawan said, "I travel a lot in my job." (*Change into indirect speech*)

8. **Do as indicated:**

[5×1=5]

a. Her story is unbelievable in the literal sense of the word. *In the sentence, what is the synonym of the underlined word?*

i. delightful iii. unanticipated

ii. incredible iv. indecipherable

b. You ought to talk to the manager to _____ the dispute.

(*Choose the word/phrase for correct collocation*)

i. flare up ii. clear up iii. solve iv. settle

c. Which of the following words is **NOT** an irregular plural word?

i. crises ii. analyses iii. oases iv. businesses

d. Which of the following words ends with the sound /d/?

i. missed ii. killed iii. visited iv. asked

e. Write a homograph with its two different meanings.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all the questions.

1. Read the following text and complete the tasks that follow.

When people think about major inventors who shaped today's technology, many quickly name Thomas Edison. Most believe he invented the light bulb, but in truth, Joseph Swan created it first. Similarly, although Edison is linked to early motion pictures, it was a Frenchman, Louis Lumière, who had already developed a motion picture machine. Even our modern electrical system is based more on Nikola Tesla's work than on Edison's.

While Edison is credited with many inventions, a lot of his success came from hiring other inventors and patenting their ideas under his own name. Although he did create some inventions himself, it is mostly confirmed that he held patents, not that he invented everything personally. Edison's real skill was using the media to build a strong business empire. He often improved existing inventions and made sure to secure patents before others could. Some even claim that inventors mysteriously died before they could patent their ideas, with Edison later claiming similar inventions—although officially these incidents are called coincidences.

On the other hand, Nikola Tesla is often seen as a selfless scientist, like a real-life "Robin Hood." Tesla first worked for Edison to fix problems with the direct current (DC) system. Later, Tesla developed his own system—alternating current (AC)—which turned out to be far more efficient. While Edison's light bulbs became common, Tesla's fluorescent lights were not as widely used. To damage Tesla's reputation, Edison even invented the electric chair to make AC seem more dangerous than DC. If Edison's DC system had succeeded, cities would have needed a power plant every square mile. Tesla's AC system allowed electricity to travel over long distances.

Despite Tesla's amazing talents—he earned 112 patents compared to Edison's 1,093—he preferred to work alone and dreamed of changing the world. Tesla's work contributed to many important technologies like neon lights, radio, remote controls, wireless power, X-rays, robotics, computers, and radar. His bladeless turbine motor is still considered one of the most efficient designs. However, Edison's political power and control of the media hurt Tesla's reputation, and many people saw Tesla as a "mad scientist."

Tesla's biggest dream was the Wardenclyffe Tower, which he hoped would provide free wireless power worldwide. However, after misleading investors about its true purpose, Tesla lost funding, and the tower was never completed. During World War I, the U.S. government destroyed his towers. In the end, Tesla died poor and forgotten in a hotel room, while Edison died rich and famous.

Nikola Tesla deserves to be remembered as the greatest inventor in history. His work not only transformed energy use but also helped protect the environment, making his contributions more important as time goes on. (Adapted from: <https://www.sj-r.com>)

Questions:

A. Choose the most appropriate option.

[5 × 1 = 5]

- a. If Thomas Edison had succeeded in promoting his DC system worldwide, what would cities likely have needed?
 - i. Solar panels on every rooftop
 - ii. A power plant every square mile

- iii. Wireless towers everywhere
 - iv. No electricity at all
- b. What best describes the difference between Edison's and Tesla's approaches to invention?
- i. Both loved working alone on secret projects.
 - ii. Edison focused on profit; Tesla focused on vision.
 - iii. Tesla was more focused on building companies than Edison.
 - iv. Edison created everything himself without help.
- c. According to the passage, what major factor damaged Tesla's reputation?
- i. His success in wireless energy
 - ii. His mental health struggles and eccentric behavior
 - iii. His strong media campaigns
 - iv. His invention of the electric chair
- d. Which invention did Edison create to discredit Tesla's AC system?
- i. Motion picture camera
 - ii. Fluorescent light bulb
 - iii. Electric chair
 - iv. Wireless radio
- e. What might have saved Tesla's Wardencllyffe Tower project from failure?
- i. Being more honest with investors
 - ii. Getting help from Edison
 - iii. Building it secretly without public knowledge
 - iv. Using it to produce direct current electricity

B. Read the text again and write

TRUE if the statement agrees with the information given in the text.

FALSE if the statement contradicts the information given in the text.

NOT GIVEN if there no information in the text.

[5×1=5]

- a. Edison's General Electric Company still exists today.
- b. Tesla received more patents than Edison during their lifetimes.
- c. The electric chair successfully convinced everyone that AC was dangerous.
- d. Tesla's work laid the foundation for future inventions like computers and radar.
- e. Edison and Tesla later became business partners again after their rivalry ended.

C. Answer the following questions in short.

[5×1=5]

- a. Why is Nikola Tesla compared to "Robin Hood" in the passage?
- b. What caused Tesla to lose the chance to finish the Wardencllyffe Tower?
- c. How did Edison try to show that Tesla's AC current was dangerous?
- d. Which invention, often wrongly credited to Edison, was actually made first by Joseph Swan?
- e. What main reason does the passage give for Tesla dying poor while Edison became rich?

2. Answer the following questions briefly:

[5×2=10]

- a. Why do you think spring season never came to the giant's garden? (*The Selfish Giant*)
- b. What was the boy afraid of while walking across the carpet? Why? (*The Wish*)

OR

Why did Makar disclose that he had killed the merchant?

(*God Sees the Truth but Waits*)

- c. Explain the Speaker's devotion to his beloved from the following lines:

And I will come again, my love, Tho' it were ten thousand miles! (*A Red, Red Rose*)

- d. According to Haldane, what are the general human needs? (*What I Require from Life*)

- e. Why did Wasserkopf give ridiculous answers? Why did the teachers accept his answers?

(*Refund*)

3. Answer the following questions in detail:

[2×5=10]

- a. The story 'Two Little Soldiers' shows the compatibility of friendship and romantic love with change, dissatisfaction, conflict, jealousy and betrayal. Explain. (*Two Little Soldiers*)

OR

How does Keilis–Borok justify that scientific research is a token of humankind's survival? (*Scientific Research is a Token of Humankind's Survival*)

- b. What fictitious stories do Don Gonzalo and Dona Laura tell each other and why? Was it wise for them to keep their identities secret? Give reasons. (*A Sunny Morning*)
4. **Suppose you want to invite your friend at your home for the celebration of your birthday party but your friend does not know the location of your home. Write an email inviting him/her with a precise direction of your location.** [7]
5. **Write a five-minute speech on the topic "Education empowers a person".** [8]
6. **Do you think modern technology (internet, AI, social media etc.) has made people more isolated than connected? Present your arguments to support your answer.** [10]
7. **Do as instructed in the brackets and rewrite your answer:** [10×1=10]
- a. The weather is bad in November. (*Put the adverb 'always' in the appropriate place.*)
- b. While we were hiking (across/through/along) the forest, we saw a mountain lion. (*Choose the correct preposition*)
- c. I'm not sure. Maybe I (will/am going to) meet you at Rita's party. (*Choose the correct answer*)
- d. Neither my brother nor my sister (own/owns) a car. (*Choose the correct verb from the brackets.*)
- e. The traffic was heavy, but we got there in time. (*Join the sentences using 'although'.*)
- f. My essay on 'Globalization' got a really good mark in the end. I found it quite difficult. (*Join the sentences with appropriate relative clause.*)
- g. You've had a long journey. You (may/must/can't) be tired. (*Choose the correct answer.*)
- h. 'I love the Toy Story Films', she said. (*Change the sentence into indirect speech.*)
- i. Alexander Fleming discovered penicillin in 1928. (*Change the sentence into passive.*)
- j. My younger sister watches _____ television a lot. (*Fill in the gap with correct article.*)
8. **Do as indicated:** [5×1=5]
- a. Could you (borrow/ lend) me your book, please? (*Choose the correct word.*)
- b. The leaders need to break down the _____ so as to create favourable environment in the nation.
ii. barriers ii. obstacles iii. hindrances iv. walls
- c. What does 'the killing or destruction of a large number of a population' mean?
ii. ruthlessness ii. conquest
iii. decimation iv. barbarianism
- d. Which of the following words ends with /t/ sound?
ii. brushed ii. killed iii. smiled iv. lasted
- e. Find the silent letters in the following words:
i. Thumb ii. cupboard

प्रथम त्रैमासिक परीक्षा -१

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : ३०

समूह: क

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्ने छ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. तलको अनुच्छेदका रेखाङ्कित वर्णहरूको उच्चारण प्रयत्न र घोषत्व छुट्टयाई लेख्नुहोस् : ३
जीवन मानिसको गतिशील यात्रा रहेछ ।
२. शुद्ध गरी पुनर्लेखन गर्नुहोस् : ३
परिछनले भन्यो कीसन भाइ तिमिहरूत लेखपढ गरेर ठुला मान्छे भयो । संगैका साथी हामी, लाग्छ धेरै पछाडी छुटिशक्यौं ।
३. अनुच्छेदमा रेखाङ्कन गरिएका पदहरूको पदवर्ग पहिचान गरी लेख्नुहोस् : २
मुखलाई नचलाऊ है, मुखलाई । ए ! म चाहिँ मुख मान्छे, तिमी चाहिँ बुद्धिमान् मान्छे ?
४. दिइएको दुवै प्रश्नहरूको उत्तर दिनुहोस् : (२+२ = ४)
क) दिइएको अनुच्छेदबाट दुई-दुई वटा तत्सम र आगन्तुक शब्द खोजेर लेख्नुहोस् :
अहिलेको खाद्य सङ्कट खडा गर्ने मूल कारण अर्थबजार हो । यसको मूल जड कृषि उपजलाई ऊर्जामा खपत गर्ने कार्यमा बढेको छ । मानिसको पेटमा पर्नुपर्ने अन्न डिजेल, पेट्रोल बनाउन प्रयोग हुन थालेको छ । यसरी बायो फ्युल बनाउने प्रवृत्ति पनि खाद्य सङ्कटको अर्को कारण हो ।
ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :
उन्नति, उद्गार, उँट, इतिहास
५. दिइएको अनुच्छेदबाट एउटा अनुकरणात्मक शब्द, एउटा उखान र एउटा टुक्का पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् : ३
एउटै समाजमा विभिन्न किसिमका मान्छेहरू देखेर म छक्क पर्छु । कोही चाहिँ भलमल्ल घाम लागिन्जेल घुदैं सुतेर चौरासी व्यञ्जन खाने छन् । कसैलाई चाहिँ मिमिरेदेखि भ्रमक्क साँभ परुन्जेल पाखुरी बजार्दा पनि आनन्दले दुई छाक हातमुख जोर्नु नै "आकाशको फल आँखा तरी मर" भएको छ । "कसैलाई परी परी कसैलाई मरी मरी" भनेको यही रहेछ ।
६. तलका दुवै प्रश्नहरूको उत्तर दिनुहोस् : (२+२ = ४)
क) तलका उपसर्ग र प्रत्यय प्रयोग गरी एक एकओटा शब्द निर्माण गर्नुहोस् :
उपसर्ग : सम्, बे
प्रत्यय : ति, इलो
ख) तलको अनुच्छेदबाट दुईवटा उपसर्ग व्युत्पन्न शब्द र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :
अशिक्षा, गरिवी, बेरोजगारी जस्ता समस्याबाट पीडित नेपाली युवा युवतीहरू हरेक दिन विदेशतिर लाग्ने गरेका छन् । यसरी युवाशक्ति नै बाहिरिएपछि राष्ट्रको उन्नति कसरी होला र ? यो राष्ट्रिय समस्या समाधान गर्नतिर सम्बन्धित निकायले ध्यान पुऱ्याएको देखिँदैन ।
७. दिइएको अनुच्छेदलाई पुलिङ्ग भए स्त्रीलिङ्ग र स्त्रीलिङ्ग भए पुलिङ्गमा परिवर्तन गर्नुहोस् : ४
तिमीले निकै प्रगति गरेछौ । तिम्रो भाइ पनि मन लगाएर पढ्दै छ रे । काकीकी छोरी भने खेल र मनोरञ्जनलाई महत्त्व दिन्छे रे । तिमिले उसलाई राम्ररी सम्झाएनौ ?
८. दिइएको अनुच्छेदका वाक्यहरूलाई बहुवचनमा परिवर्तन गर्नुहोस् : ४
ऊ मेरी छिमेकीकी छोरी हो । ऊ पढाइमा निकै तेज छे । ऊ साहित्य, दर्शन, इतिहासका पुस्तकहरू खोजी खोजी पढ्छे । सम्भवतः ऊ उच्च शिक्षाका निम्ति विदेश जाली ।
९. दुवै प्रश्नको उत्तर दिनुहोस् : (४+४ = ८)
क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर लेख्नुहोस् :
नेपाल खुला एवम् बजारोन्मुख अर्थव्यवस्था भएको मुलुक हो । हाम्रो देशले आफ्नै स्रोतसाधनको परिचालन गरी आर्थिक विकास र गरिवी निवारणको वाणिज्य नीति अवलम्बन गरेको छ । अन्तर्राष्ट्रिय स्तरमा प्रतिस्पर्धा गर्नु र व्यापार व्यवसायको प्रवर्धन गर्नु यसको मूल उद्देश्य हो । सामान निकासी, पैठारीलाई समयानुकूल बनाई राजस्व सङ्कलन गर्दा देशको अर्थतन्त्रमा सहयोग पुग्छ । आफ्नो देशमा उत्पादित जडीबुटी तथा कृषिजन्य वस्तुलाई व्यवस्थापन गरी मुनाफा

आर्जन गर्न सकिने ढाँचामा हाम्रो वाणिज्य नीति तय भएको छ । व्यापारघाटा कम गर्न र रोजगारीको सङ्ख्यामा वृद्धि गर्न यस नीतिले सहयोग पुऱ्याउने अपेक्षा लिइएको छ । प्राकृतिक र जैविक विविधताले युक्त यस देशमा पशुपन्छी र वनस्पतिजन्य उत्पादनलाई उचित प्रविधि र जनशक्तिको संयोजनद्वारा निर्यात प्रवर्द्धन गर्न सकिने सम्भावना टरेको छैन । लघु उद्योग, घरेलु उद्योगलाई प्रोत्साहन गर्दै नेपाली माटो सुहाउँदो अर्थतन्त्र निर्माणतिर लाग्ने हो भने राज्यको राजस्व सङ्कलनमा पनि वृद्धि हुन्छ । देशभित्रै रोजगार सिर्जना गर्नका लागि उद्योग व्यवसाय सञ्चालनार्थ राज्यले निजी क्षेत्रलाई पनि प्रोत्साहन गर्न सके हाम्रो अर्थव्यवस्था मजबुत बन्न पुग्छ । यसरी सरकारले सहजकर्ताको भूमिका निर्वाह गरी उत्प्रेरक र नियामक निकायबाट अनुगमनसमेत गर्दै निजी क्षेत्रको पनि सक्रिय सहभागिताले देशलाई आर्थिक समृद्धिको बाटोमा हिँडाउन सक्छ ।

प्रश्नहरू :

- (अ) नेपालले कस्तो वाणिज्य नीति अवलम्बन गरेको छ ?
- (आ) राजस्वमा वृद्धि कसरी गर्न सकिन्छ ?
- (इ) देशको समृद्धिमा निजी क्षेत्रको भूमिका कस्तो हुन्छ ?
- (ई) “जैविक विविधता र गरिबी निवारण” पदावलीको अर्थ लेख्नुहोस् ।

ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

मुलुकमा रहेको बेरोजगार एवम् अनुत्पादक श्रम शक्तिलाई उनीहरूको योग्यता, सिप तथा दक्षता अनुरूप अन्य विभिन्न मुलुकमा रोजगारीका लागि पठाई उनीहरूमाफर्त्त वैदेशिक विप्रेषण आय, सिप, प्रविधि र अनुभव स्वदेशमा भित्र्याइन्छ । नेपालको अर्थव्यवस्थामा वैदेशिक रोजगारीको योगदान उल्लेखनीय रहेको छ । विगतको दशकको समयमा अर्थतन्त्रका आन्तरिक पक्षहरू कृषि, उद्योग, व्यापार लगायतका क्षेत्रहरूमा नकारात्मक असर परेको अवस्थामा समेत वैदेशिक रोजगारीले निरन्तर टेवा पुऱ्याए तापनि दक्ष कामदार १.५ प्रतिशत, २४ प्रतिशत अर्धदक्ष र ७४.५ प्रतिशत अदक्ष जनशक्ति विदेसिने हुँदा नेपालले यसबाट पूर्ण लाभ लिन सकिरहेको छैन । नेपाली कामदारको मुख्य गन्तव्यका रूपमा कतार, मलेसिया, बहराइन, साउदी अरेबिया, संयुक्त अरब इमिरेट्स र कुवेत रहेका छन् । वैदेशिक रोजगार विकासको दीर्घकालीन स्रोत होइन । मुलुकभित्रै कृषि क्षेत्रको आधुनिकीकरण एवम् व्यावसायीकरण, उद्योग क्षेत्रको विकास र विस्तार तथा विविध स्वरोजगारीका अवसर सिर्जनामाफर्त्त बाध्यात्मक वैदेशिक रोजगारीको अन्त्य गरी दक्ष एवम् सिपयुक्त जनशक्तिलाई मात्र वैदेशिक रोजगारीमा परिचालन गर्दै वैदेशिक रोजगारीलाई सुरक्षित, मर्यादित र व्यवस्थित गरेमा नेपालले आर्थिक विकासमा वैदेशिक रोजगारीबाट अधिकतम लाभ लिन सकिन्छ ।

प्रश्नहरू :

- (क) विप्रेषण शब्दको अर्थ कुन हो ?
(अ) रेमिट्यान्स (आ) तलब (इ) रोजगारी (ई) आम्दानी
- (ख) नेपालको अर्थतन्त्रका आन्तरिक पक्षहरू के के हुन् ?
(अ) व्यापार र जडीबुटी (आ) यातायात र शिक्षा (इ) स्वास्थ्य र रोजगार (ई) कृषि र उद्योग
- (ग) विकासको दीर्घकालीन स्रोत के हो ?
(अ) वैदेशिक रोजगारी (आ) सुरक्षित लगानी (इ) कृषिको आधुनिकीकरण (ई) श्रम स्वीकृति
- (घ) नेपाली कामदारको मुख्य गन्तव्यका रूपमा कतार, मलेसिया, बहराइन, साउदी अरेबिया, संयुक्त अरब इमिरेट्स र कुवेत रहेका छन् । भन्ने वाक्यमा ‘गन्तव्य’ कस्तो शब्द के हो ?
(अ) उपसर्ग व्युत्पन्न (आ) प्रत्यय व्युत्पन्न (इ) समस्त शब्द (ई) द्वित्व शब्द

१०. तलको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश लेख्नुहोस् : (२+२=४)

नेपाललाई सगरमाथाको देशका साथै नदीनालाको देश पनि भनिन्छ । नेपालमा ठुला, मझौला र साना गरी ६ हजारभन्दा बढी खोलानालाहरू बग्दछन् । यीमध्ये कतिपय स्रोतहरू हिमालका हिमजलबाट परिपोषित भएका छन् । नेपालबाट बग्ने नदीनालाहरूबाट ७० अरब क्युबिक मिटर पानी बहने गर्दछन् । यो जलप्रवाह गडुगा नदीमा मिली बडुगालको खाडीमा पुग्दछ । यस पानीबाट हामीले खास उपयोगिता लिन नसकेका मात्र होइनौं अपितु आफ्नो देशको मूल्यवान् माटोलाई समेत यसले देशबाहिर पुऱ्याएको कुरा सर्वविदितै छ । यसरी सम्भाव्य आर्थिक मेरुदण्डका रूपमा रहेको जलसम्पदालाई उपयोगमा ल्याई देशमा विद्यमान खाद्यान्न, ऊर्जा र अन्य समस्याहरूको निराकरण गर्नु आजको चुनौती रहेको छ । देशको आर्थिक विकासका लागि विद्युत् शक्ति महत्त्वपूर्ण र सर्वोपरि देन हुन सक्छ । नेपालमा उपलब्ध जलसम्पदाबाट प्रचुर मात्रामा जलविद्युत् शक्तिको विकास गर्ने गुन्जायस भएको र कोइला, ग्याँस, खनिज, तेल आदि अन्य शक्तिको स्रोत पनि पत्ता लागिसकेको हुँदा यी सबै ऊर्जा शक्तिको विकास गर्नेतर्फ जोड दिएर अधि बढ्नु आजको समयको माग हो ।

११. खेलकुद परिषद्का तर्फबाट राष्ट्रिय स्तरको भलिबल प्रतियोगिताका विजयी खेलाडीहरूलाई दिइने ‘बधाई’ ज्ञापनको नमुना तयार पार्नुहोस् ।

१२. ‘युवा पुस्तामा बढ्दो इन्टरनेटको प्रयोग र यसको असर’ विषयमा १०० शब्दसम्मको एक अनुच्छेद तयार पार्नुहोस् ।

१३. शिक्षाले मान्छेलाई सुसंस्कार सिकाउँछ भन्ने कुरामा तपाईंको सहमति छ ? १२५ शब्दसम्ममा आफ्नो प्रतिक्रिया लेख्नुहोस् । ४
अथवा

योगमायाले गरेका सुधारका प्रयासहरूका साथै उनी असफल हुनुका कारणहरूलाई विश्लेषण गर्नुहोस् ।

१४. दुवै प्रश्नको उत्तर लेख्नुहोस् :

(४+४ = ८)

क) दिइएको कवितांश पढी सोधिएका प्रश्नहरूको उत्तर दिनुहोस् ।

डिगार्चामा डोब तिम्पो चिसो हिउँभित्र होला
वेत्रावती किनारभरि पौरखको चिनो होला
वीर पुर्खा ! तिमीलाई मितेरीले मात्र बाँध्यो
सागर तरी संसारभरि वीर गोर्खा रगत बग्यो ।

प्रश्नहरू :

अ) माथिको कवितांशमा हाम्रा पुर्खाहरूले लडेको कुन युद्धको सम्झना गरिएको छ ? चर्चा गर्नुहोस् ।

आ) 'सागर तरी संसारभरि वीर गोर्खा रगत बग्यो ।' यस कथनको आशय के हो ?

ख) दिइएको कथांश पढी सोधिएका प्रश्नहरूको उत्तर दिनुहोस् :

"परिछन ! यसो भनेर किन मलाई लज्जत पाछो । गाउँ तिमीहरूकै हो । तिमीहरूकै हँसिया, खुर्पी, कोदालो र पाखुरीका बलमा गाउँ बाँचेको छ, गाउँका इज्जत भनेका तिमीहरू नै हो । तिमीहरूकै आडमा गाउँ अभिमानी भएको छ । तिम्पो पाखुरीले यो खोलाको धारलाई त फर्काउँछ भने गाउँको इज्जत माथि नउठाउला त !"

प्रश्नहरू :

अ) कृष्णले किन परिछनलाई गाउँको इज्जत भनेको हो ?

आ) किसन कस्तो प्रवृत्तिको पात्र हो ? यसै कथांशलाई आधार बनाएर छोटो उत्तर दिनुहोस् ।

१५. 'गाउँको माया' कथामा कस्तो समाजको चित्रण गरिएको छ ? समीक्षात्मक उत्तर दिनुहोस् । ८

१६. तल दिइएकामध्ये कुनै एक शीर्षकमा २५० शब्दभित्र निबन्ध लेख्नुहोस् : ८

क) मेरो जीवनको लक्ष्य

ख) अधिकार र कर्तव्य

प्रथम त्रैमासिक परीक्षा - २

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : ३०

समूह: ख

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्ने छ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. तलको अनुच्छेदका रेखाङ्कित वर्णहरूको उच्चारण स्थान र प्राणत्व छुट्ट्याई लेख्नुहोस् : ३

सुन्यासी जीवन सुरु गरेसँगै योगमायामा सामाजिक चेतना सल्वलायो ।

२. शुद्ध गरी पुनर्लेखन गर्नुहोस् : ३

आमाले भन्नुभयो, बाबु ! ऋनको आहालमा डुबीयो नी । त्यसले पनी सुन्दर लाई डिप्रेसनजस्तै भएको हो ।

३. अनुच्छेदमा रेखाङ्कन गरिएका पदहरूको पदवर्ग पहिचान गरी लेख्नुहोस् : २

त्यति धेरै मान्छेहरूलाई त्यति मासु ? यो त हात्तीको मुखमा जिरा भएन र ?

४. दिइएका दुवै प्रश्नहरूको उत्तर दिनुहोस् : (२+२ = ४)

क) दिइएको अनुच्छेदबाट दुईवटा तत्सम र दुईवटा आगन्तुक शब्द खोजेर लेख्नुहोस् :

जेनेटिक रूपमा विकसित वस्तुहरूमा एक आपसमा वंशाणु गुण सारिने हुँदा त्यसले नयाँ जिनको विकास गर्दछ । तत्कालका लागि फाइदा देखिए पनि कालान्तरमा यो हानिकारक देखिन्छ ।

ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :

न्यून, न्याय, नृत्य, नैतिक

५. दिइएको अनुच्छेदबाट एउटा उखान, एउटा टुक्का र एउटा अनुकरणात्मक शब्द पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् : ३

"भाग्यमा भए लडीलडी आउँछ" भन्दै हात बाँधेर बस्नेहरूलाई देखेर जसलाई पनि भनक्क रिस उठ्छ नि । भाग्यमा छ भन्दैमा डोकोमा दुध दुहुँदा अडिने भए हरेक व्यक्ति आ-आफ्नो कर्तव्य पूरा गर्न कम्मर कसेर किन कर्मरत हुन्थे ? तरतरी पसिना चुहाएर

किन परिश्रम गर्थे ? सुतेर बसे पनि त हुन्थ्यो । त्यसरी बसेका भए आज संसार जड्गल र हामी जड्गली नै हुन्थ्यौं भन्दै उहाँ मुसुकक मुस्कुराउनुभयो ।

६. तलका दुवै प्रश्नहरूको उत्तर दिनुहोस् : (२+२ = ४)

क) तलका उपसर्ग र प्रत्यय प्रयोग गरी एक एकओटा शब्द निर्माण गर्नुहोस् :

उपसर्ग : परि, आ प्रत्यय: अनीय, अन

ख) तलको अनुच्छेदबाट दुईओटा उपसर्ग व्युत्पन्न शब्द र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :

देश विदेशमा प्रतिदिनको बढ्दो प्रदूषणले वातावरणीय समस्या निम्तिएको छ । प्रदूषणको प्रकोपले विभिन्न प्रकारका रोगहरूले संसार नै पीडित भएकोले सम्पूर्ण मानव समुदाय समयमा नै सचेत हुनु मानवीय कर्तव्य हो ।

७. तलको अनुच्छेदका वाक्यहरूलाई स्त्रीलिङ्ग भए पुलिङ्ग र पुलिङ्ग भए स्त्रीलिङ्गमा परिवर्तन गर्नुहोस् : ४

ऊ मेरो छिमेकी भाइ हो । उसले स्नातक गर्ने वित्तिकै काम गर्न थालेको हो । उसको एउटी बहिनीछे । ऊ पनि पढाइलाई अत्यन्त महत्त्व दिन्छे ।

८. तलको अनुच्छेदका वाक्यहरूलाई बहुवचनमा परिवर्तन गर्नुहोस् : ४

ऊ चञ्चले स्वभावका छ । ऊ बसेर ध्यानपूर्वक पढ्दैन । भएको एकाइ परीक्षा पनि तिमीले बिगायौं । उसले बिगायो । उसले चाँडै आफ्नो बानी सुधारैना भन्ने भविष्यमा पछुताउने छ ।

९. दुवै प्रश्नको उत्तर दिनुहोस् : (४+४ = ८)

क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर लेख्नुहोस् :

मैले प्रयोग गर्नुहुँदैन भनेको छैन । कुरो यति हो कि मैले प्रयोग गरेको छैन । प्रयोग नगरी पनि यसरी नै गजबसँग उत्पादन गर्न सकिन्छ, भने किन प्रयोग गर्नुपर्छ ? यदि कसैले गर्ने नै विचार गर्छ भने कृषिविद्को सल्लाहमा माटो, हावा, पानी नबिग्रने गरी गर्नु पर्छ । मानव स्वास्थ्यलाई विचार गरेर गर्नुपर्छ । जमिनलाई उर्वर बनाउन गर्नु पर्छ, बन्जर बनाउन होइन । खासमा कृषि क्षेत्रमा जथाभावी रूपमा रासायनिक मल र विषादीको प्रयोग गर्नाले हामीले खाद्यपदार्थसँगै विष खाइराखेका छौं । त्यति मात्रै होइन, रासायनिक मल तथा विषादीहरूको अत्यधिक प्रयोग गरेर पानीको स्रोत र सास फेर्ने हावासमेत विषाक्त बनाएका छौं । माटोसमेत बर्बाद बनाएर जलचर र स्थलचर जीवहरूको हत्या गरेका छौं । प्राणीहरूको जीवन रक्षाको आदर्शलाई भुलेर यसरी विषादी प्रयोग गर्नु अपराध कर्म होइन ? मलाई लाग्छ, यो राम्रो भइराखेको छैन । त्यसैले त बेलाबेलामा प्रकृतिले अनेक रोगका नाममा हामीहरूलाई पनि सजाय दिइराखेको छ, हैन र ?

प्रश्नहरू :

- (अ) के गर्दा जमिन उर्वर बन्छ ?
 (आ) पानीका स्रोत विषाक्त हुनाको कारण के हो ?
 (ई) प्रकृतिले हामीलाई कसरी सजाय दिइराखेको छ ?
 (इ) 'बन्जर र स्थलचर' शब्दको अर्थ लेख्नुहोस् ।

ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नहरूको ठिक उत्तर लेख्नुहोस् :

विश्व स्वास्थ्य सङ्गठनको परिभाषाअनुसार राम्रो स्वास्थ्य भनेको रोग वा दुर्बलताको अभाव मात्र नभएर शारीरिक, मानसिक रूपले पूर्ण तन्दुरुस्तीको अवस्था हो । जुन देशका नागरिकहरू स्वस्थ हुन्छन्, त्यस्तो देशको प्रगति द्रुततर हुन्छ । कुनै पनि देशको स्वास्थ्य स्थिति कति सबल छ, भन्ने कुरा त्यहाँका नागरिकहरूमा सुर्तीजन्य पदार्थको प्रयोगको स्थिति, उच्च रक्तचाप तथा मोटोपनको स्थिति (स्वास्थ्य जोखिम), शुद्ध पानीको उपलब्धता, औसत आयु, कुपोषणग्रस्त जनसङ्ख्याको प्रतिशतका साथै दुर्घटना, द्वन्द्व वा प्राकृतिक विपत्ति जस्ता अन्य कारणबाट हुने मृत्युको अवस्था आदिमा निर्भर हुन्छ । यस्ता सूचकका आधारमा संसारकै सबैभन्दा राम्रो स्वास्थ्य स्थिति भएको देशको रूपमा स्पेनलाई लिइन्छ । लगभग १००० वर्षको इतिहास भएको चिकित्सा विज्ञान मानव सभ्यताको महत्त्वपूर्ण कान्छो उपलब्धि हो र यसको मुख्य उद्देश्य व्यक्तिको शारीरिक तथा मानसिक स्वास्थ्यलाई उच्चतम बिन्दुमा पुऱ्याउनु हो । स्वास्थ्य विज्ञानमा रोकथाम, निदान र निवारणको तीनओटा विधिमा ध्यान दिइन्छ । यी विधिमध्ये चिकित्सा विज्ञान मुख्यतया निदान र निवारणमै अल्झिएको छ । रोग लागेपछि उपचार गर्नुभन्दा रोग लाग्न नदिनु नै उत्तम हो भन्ने उक्तिलाई कम महत्त्व दिइएको छ । अर्थात् चिकित्सा विज्ञानमा रोकथामलाई भन्दा रोग लागिसकेपछि उपचार गर्ने परिपाटीले बढी महत्त्व पाएको छ ।

प्रश्नहरू :

क) स्वस्थ हुनु भनेको के हो ?

- अ) शारीरिक, मानसिक र भावनात्मक तन्दुरुस्ती
 आ) मानसिक, भावनात्मक, आर्थिक तन्दुरुस्ती
 इ) शारीरिक, आर्थिक, सामाजिक तन्दुरुस्ती
 ई) सामाजिक, बौद्धिक, भावनात्मक तन्दुरुस्ती

ख) देशका नागरिकको स्वास्थ्य स्थिति कुन कुरामा निर्भर हुन्छ ?

अ) सामाजिक स्थिति आ) जनसङ्ख्याको प्रतिशत इ) औसत आयु ई) सुर्तीजन्य पदार्थ

ग) चिकित्सा विज्ञानको मुख्य उद्देश्य के हो ?

अ) शारीरिक तथा बौद्धिक स्वास्थ्यलाई उच्चतम बिन्दुमा पुऱ्याउनु
आ) शारीरिक तथा भौतिक स्वास्थ्यलाई उच्चतम बिन्दुमा पुऱ्याउनु
इ) शारीरिक तथा आर्थिक स्वास्थ्यलाई उच्चतम बिन्दुमा पुऱ्याउनु
ई) शारीरिक तथा मानसिक स्वास्थ्यलाई उच्चतम बिन्दुमा पुऱ्याउनु

घ) स्वास्थ्य विज्ञानमा कुन कुन विधिमा ध्यान दिइन्छ ?

अ) निवारण, निदान र रोकथाम आ) रोकथाम, निदान र निवारण
इ) निदान, रोकथाम र निवारण ई) निदान, निवारण र रोकथाम

१०. तलको गद्यांशबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश लेख्नुहोस् ।

(२+२=४)

विकासको माध्यमबाट आफ्नो सामाजिक, आर्थिक अवस्था सुधार्न पाउनु मानिसको नैसर्गिक अधिकार भएकाले यसका लागि प्राकृतिक तथा भौतिक स्रोतको उपयोग पनि गर्नु पर्ने हुन्छ । तर यी स्रोतको अन्धाधुन्ध प्रयोग भएमा निश्चित रूपमा वातावरणीय विसङ्गतिहरू बढ्ने भएकाले स्रोतको उपलब्धता विचार गरी यसको कसरी दिगो उपयोग गर्न सकिन्छ ? त्यसतर्फ पनि ध्यान केन्द्रित गर्नु पर्ने हुन्छ । साथै यी स्रोतको उपयोग गर्दा वातावरणमा प्रतिकूल प्रभाव पार्नु हुँदैन । यस कुरामा स्टकहोम सम्मेलन र ब्राजिलको रियो दि जेनेरियोमा सम्पन्न वातावरणीय पक्षलाई एकीकृत गर्दै लैजाने सहमति पनि कायम भएको थियो । वातावरणको क्षेत्रमा विकसित र विकासशील राष्ट्रका आआफ्नै प्राथमिकता छन् । अगिल्लो समूहका देशहरू प्रदूषणजन्य समस्याबाट पीडित भएकाले वातावरणीय प्रदूषण कम गर्नेतर्फ बढी क्रियाशील छन् भने पछिल्लो समूहका देशका जनताहरू स्रोतको दिगो उपयोग गरी गरिबी र पछोटेपन हटाउनु पर्ने कुरामा जोड दिन चाहन्छन् । यो वास्तविकता हो, बाध्यता हो, आवश्यकता हो । तर यसका लागि आवश्यक पर्ने वित्तीय स्रोत र प्रविधिको अभावमा आफ्नो स्रोत पनि उपयोग गर्न नसकी गरिब मुलुक अझ गरिब हुँदै गएका छन् । यसरी हेर्दा आज विकसित देशहरू आर्थिक विकासबाट सिर्जित वातावरणीय समस्याबाट पीडित भएको देखिन्छ भने अल्प विकसित देशका जनता आफ्ना स्रोतको उपयोग गर्ने प्रक्रिया वा स्रोतको उपयोग गर्न असक्षम भएका कारणबाट सिर्जित वातावरणीय समस्याको जालोमा फसेका छन् ।

११. आफ्नो विद्यालयको पच्चिसौं वार्षिकोत्सव समारोहमा अभिभावक वर्गलाई आमन्त्रण गर्न लेख्नुपर्ने निमन्त्रणा पत्रको नमुना तयार पार्नुहोस् ।

४

१२. 'नेपालमा इन्धनको समस्या' शीर्षकमा १०० शब्दसम्मको एक अनुच्छेद तयार पार्नुहोस् ।

४

१३. 'दाइजो प्रथा' ले समाजमा पारेका असरका साथै यसको अन्त्य गर्न के कस्ता उपायहरू अपनाउन सकिन्छ ? आफ्नो प्रतिक्रिया दिनुहोस् ।

४

अथवा

समाज परिवर्तनका निम्ति योगमायाले केकस्ता प्रयत्नहरू गरिन् ? चर्चा गर्नुहोस् ।

१४. तलका दुवै प्रश्नको उत्तर दिनुहोस् :

(४+४=८)

क) दिइएको कथांश पढी सोधिएका प्रश्नहरूको उत्तर दिनुहोस् :

पानी पिउँदै गर्दा लगभग उदास र आर्द्र उसको स्वर मेरो कानमा गुन्जियो । उसले जसरी अँध्यारो मुखमुद्रामा विनाभूमिका मलाई यो खबर सुनायो । सहसा मलाई लाग्यो - गाउँमा सायद अब अङ्ग्रेजहरूको रोग सदै छ, "डिभाइड एन्ड रल !" परिछनहरू भाँचिदै छन् । परिछनहरूको सगबगाउँदो चेतनासँगै गाउँका ठालुहरू नयाँ जुक्तिहरू सोच्दै छन् ता कि तमाम परिछनहरू परिछन नै रहन् । अर्थात् क्रीतदासरूपी हलीगोठाला नै रहन् र मालिकहरूकै कृपापात्र भएर रहन्, जुन एउटा परम्पराका रूपमा तिनका पुर्खाहरूले तिनका हातमा नासो छोडेर गएका थिए ।

प्रश्नहरू :

अ) गाउँमा सायद अब अङ्ग्रेजहरूको रोग सदै छ भन्नुको आशय के हो ? चर्चा गर्नुहोस् ।

आ) परिछनहरूले भोग्नुपरेको परम्परा नै उनीहरूको जीवनस्तर माथि उठ्न नसक्ने कारण किन बन्थो ?

ख) तलको कवितांश पढी सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस् :

नाका थुनी नेपालीलाई कसले छेक्न सकेथ्यो र
हिमालको हिमनदी कसले रोक्न सकेथ्यो र
वीर पुर्खा ! तिम्रै रगत नेपालीका नसाभरि
उही गीत उही गौरव चन्द्रसूर्य ध्वजाभरि ।

प्रश्नहरू :

अ) माथिका पद्यांशमा हाम्रा पुर्खाहरूले लड्नु परेको कुन लडाइँको प्रसङ्गलाई ल्याएको छ ? चर्चा गर्नुहोस् ।
आ) हाम्रा पुर्खाहरूलाई हिमनदीसँग किन तुलना गरिएको हो ?

१५. 'वीर पुर्खा' कविताको आधारमा हाम्रा वीर पुर्खाको गौरव गाथाको वर्णन गर्नुहोस् ।

८

१६. कुनै एक शीर्षकमा २५० शब्दभित्र एउटा निबन्ध लेख्नुहोस् :

८

क) मलाई मन पर्ने कलाकार ख) पर्यटनको महत्व

दोस्रो त्रैमासिक परीक्षा - १

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : ३०

समूह : क

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. तलका दिइएका रेखाङ्कित वर्णहरूको उच्चारण स्थान र प्राणत्व छुट्याई लेख्नुहोस् ।

३

कुनै सज्जन फलफूल बाँडिरहेछन् । ठिक हो विगानेभन्दा सपाने धेरै छन् । अलि अलि चन्दा धेरैबाट आएर धेरै बन्न सक्छ ।

२. शुद्ध गरी पुनर्लेखन गर्नुहोस् :

३

खोलो अचेल फेरि गाउँ तिर शोभिएको रहेछ । यो खोलाले पनि गाउँलाई धुरुक्कै रुवायो हुन त रुवायो मात्रै भन्नु खोलाप्रती अन्याय ठहर्ला ।

३. अनुच्छेदमा रेखाङ्कन गरिएका शब्दको पदवर्ग पहिचान गरी लेख्नुहोस् ।

२

मैले ढोका खोल्दा तिमी भित्रै थियो तर केही बोलेनौ भन्ने गुनासोसम्म मात्र मैले गरेको हुँ । छि ! तिमी त त्यस्तो कष्टी स्वभावका छौ भन्ने मैले सोचेको पनि थिइनै है ।

४. दिइएका प्रश्नको उत्तर दिनुहोस् ।

(२+२ = ४)

(क) दिइएको अनुच्छेदबाट दुई दुईओटा तद्भव र आगन्तुक शब्द पहिचान गरी लेख्नुहोस् ।

अखबारको पङ्क्तिरिवाट आँखा हटाएर मैले आगन्तुकपट्टि हेरेँ । उसका हातमा एउटा लिफाफा र एक पाना कागज थियो ।

(ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् ।

कर्ण ऋषि तपस्या ज्ञान

५. दिइएको अनुच्छेदबाट एउटा अनुकरणात्मक शब्द, एउटा उखान र एउटा टुक्का पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् ।

३

हुने बिरुवाको चिल्लो पात भने भैँ सबै साथीलाई मेख मादैं परीक्षामा प्राप्त गरेको स्वप्निलको सफलताबाट उसका अभिभावक खुसीले गदगद भए । अकबरी सुनलाई कुसी लगाउनु पदैन भन्दै मेधावी विद्यार्थी स्वप्निलले सबैको नाक राखेकामा आफूलाई धेरै खुसी लागेको कुरा विद्यालयका प्रधानाध्यापकले मुसुमुसु हाँस्दै सबैलाई बताए ।

६. दुबै प्रश्नका उत्तर दिनुहोस् ।

(२+२ = ४)

(क) तलको अनुच्छेदबाट दुईओटा उपसर्ग र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया समेत देखाउनुहोस् :

अस्थिर राजनीतिक व्यवस्थाका कारण देशमा बेमेल बहिरेहेको देखिन्छ । क्षेत्रीय प्रगति र पहाडी भेगको उन्नतिका लागि असल नेतृत्व अत्यावश्यक देखिन्छ ।

(ख) तलको अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह गर्नुहोस् र दुईओटा द्वित्व शब्द पहिचान गरी दोहोरिएको अंश छुट्याउनुहोस् :

चौवाटोमा होहल्ला र नाराजुलुस गरेर देश बन्ने भए उहिल्यै बनिस्कथ्यो । जबसम्म प्रत्येक नेपालीको मनमनमा देशभक्तिका भावना जाग्दैन, आपसआपसमा मिलीजुली राष्ट्र निर्माण गर्दैनन्, तबसम्म देशको विकास दिवास्वप्न मात्र हुनेछ ।

७. दुबै प्रश्नका उत्तर दिनुहोस् ।

(२+२ = ४)

(क) दिइएको अनुच्छेदलाई पुलिङ्ग भए स्त्रीलिङ्ग र स्त्रीलिङ्ग भए पुलिङ्गमा परिवर्तन गरी पुनर्लेखन गर्नुहोस् :

मेरी कान्छी बहिनी बजारतिर जाँदै थिई । मेरा कान्छा काका बजारबाट घर फर्कदै हुनुहुन्थ्यो । उसले काकालाई बाटामा भेटी । उसकी मितिनी पनि खेतमा आएकी थिई ।

(ख) दिइएको अनुच्छेदलाई एकवचन भए बहुवचन र बहुवचन भए एकवचनमा परिवर्तन गरी पुनर्लेखन गर्नुहोस् :

उनीहरूले कृषि फर्म खोलेका रहेछन् । मलाई पनि नयाँ नयाँ काम गर्ने रहर छ । तँ पनि केही गर्ने भए तँ र म मिलेर गरौं । हामीले मिलेर काम गर्न सकिन्छ, भन्ने कुरा समाजमा देखाउनुपर्छ ।

८. दुबै प्रश्नको उत्तर दिनुहोस् ।

(२+२ = ४)

(क) तलका वाक्यलाई सङ्गति मिलाइ पुनर्लेखन गर्नुहोस्:

हामी अहिले कक्षा एघारमा पढ्छु । हाम्रो आमा सरकारी कर्मचारी हो । आमाका तीनजना मिल्ने साथीहरू छ । म र मेरो बहिनीले पनि उहाँहरूलाई चिन्छु ।

(ख) तलका गद्यांशबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तार र दुईओटा विधेय विस्तार पद पहिचान गरी लेख्नुहोस्:

मेरा साथीका दाइले बसको टिकट काटिदिनुहोला । उनी लुम्बिनी घुम्न जालिन् । मेरी मिल्ने साथी उनी एक हप्तापछि मात्र लुम्बिनीबाट फर्कलिन । एक हप्तापछि म उनलाई यहीं स्वागत गरूँला ।

९. दुवै प्रश्नको उत्तर दिनुहोस् ।

(४+४ = ८)

(क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर लेख्नुहोस् :

प्रत्येक जीवका शरीरमा एउटा अत्यन्त सूक्ष्म मन हुन्छ । यो अत्यन्त तीव्र र गतिवान् हुन्छ । यसले इन्द्रियलाई नियन्त्रण गरेको हुन्छ । यसको आत्मासँग सम्बन्ध विच्छेद भयो भने अचेतन भएर सुप्त रहन्छ । प्रत्येक व्यक्तिका मनमा सत्त्व, रज र तम गरी तीन प्राकृतिक गुण हुन्छन् । यीमध्ये सामान्यतया कुनै एउटा प्रबल हुन्छ । व्यक्तिमा तीन गुणमध्ये जुन गुण प्रबल रहन्छ, व्यक्तिको आचरण र आनीवानी पनि सोही गुणका विशेषता अनुरूपकै हुने गर्छ । समय समयमा आहार, आचरण र परिस्थितिको प्रभावले गर्दा अन्य गुण पनि जागृत हुन्छन् । आशक्ति र द्वेष शून्य वास्तविक मन सात्त्विक मन हो । रागयुक्त, सचेत र चञ्चल मन राजस मन हो । क्रोधी र अज्ञानी मनलाई तामस भनिन्छ । त्यसैले सात्त्विक मनलाई शुद्ध, सत्त्व वा प्राकृतिक मानिन्छ भने राजस र तामसलाई दोषपूर्ण मानिन्छ । आत्माबाट चेतना प्राप्त गरेपछि स्वाभाविक वा दोषपूर्ण मनले आफ्ना गुणअनुसार इन्द्रियलाई आआफ्ना वस्तुमा संलग्न गराउँछ । त्यहीअनुसार शारीरिक कार्य सम्पन्न हुन्छन् । आत्माले मनद्वारा इन्द्रियलाई अर्थात् शरीरका अङ्गलाई उत्तेजित गर्छ किनभने मन नै आत्माको साधन हो । मनको सम्पर्क जुन इन्द्रियसँग हुन्छ, ज्ञान पनि त्यही इन्द्रियद्वारा प्राप्त हुन्छ ।

प्रश्नहरू

(क) व्यक्तिका मनमा कुन कुन गुण रहेका हुन्छन् ?

(ख) मन र इन्द्रियविचको सम्बन्ध देखाउनुहोस् ?

(ग) राजस र तामस मनमा के भिन्नता पाइन्छ ?

(घ) व्यक्तिका व्यवहार कसरी निर्धारण हुँदा रहेछन् ?

(ख).दिइएको अनुच्छेद पढी अन्त्यमा सोधिएका प्रश्नको उत्तर छानेर लेख्नुहोस्:

रातको बाह्र बजेको थियो । कोठामा म थिएँ । स्वास्नी थिई विरामी र सोचिरहेको थिएँ, अप्रेसनका लागि जुटाउनुपर्ने पाँच लाख रुपियाँ कहाँबाट ल्याउने ? एकाएक प्रकट भए भगवान् कोठामा । भस्किएँ । के भयो ! के यो सत्य त हो ! चिमोटै आफैँलाई । रहेनछ यो कुनै सपना वा भ्रान्ति । मुस्कुराउँदै भने भगवान्ले- 'ए मनुवा ! के माग्छस् माग् ।' यो अप्रत्यासित क्षण । म के माग्ँ ? 'छिटो माग् ।' भने भगवान्ले । हड्बडिएँ सायद । के माग्ने ? विल्डिड, गाडी, पैसा ? सोचें माग्छु पैसा । चाहिएको छ अप्रेसनका लागि खुसी जीवनका लागि । तर कति माग्ने ? दश लाख, पचास लाख, एक करोड, दश करोड ? 'छिटो माग् । समय सकिन लाग्यो ।' भगवान्ले घडी हेर्दै भने । 'एकै सासमा भनें- दश करोड रुपियाँ दिनुस् प्रभु !' 'तथास्तु !' भगवान् विलाए । एकाएक थुप्रिए करोडका नोटहरू । खुसीले उफ्रिएँ र उठाउन खोजें स्वास्नी चिसो भइसकेकी थिई । नाडी छामें । थिएन नाडी । थियो स्वास्नीको लास एकातिर । अर्कोतिर नोटका बिटाहरू थिए अनि थिएँ म बिचमा अवाक् । चिच्याएँ- 'प्रभु मलाई स्वास्नीको जीवन दिनुस् ।' तर थिएनन् भगवान् त्यहाँ । थियो शून्यता । केवल शून्यता । थिए नोटका बिटाहरू ।

प्रश्नहरू

(क) प्रस्तुत कथामा वर्णित घटना कुन समयमा घटेको हो ?

(अ) रातको एघार बजे

(आ) रातको बाह्र बजे

(इ) रातको एक बजे

(ई) रातको साढे बाह्र बजे

(ख) अप्रेसन खर्च कति लाग्ने रहेछ ?

(अ) पाँच लाख

(आ) एक करोड

(इ) दश करोड

(ई) दश लाख

(ग) एकाएक प्रकट भएका भगवान्ले के भने ?

(अ) ए मनुवा ! के सोच्दै छस्

(आ) ए मनुवा ! तलाई के चाहियो

(इ) ए मनुवा ! के माग्छस् माग्

(ई) ए भाइ, म के माग्ँ

(घ) म पात्रले के माग्यो ?

(अ) गाडी (आ) पैसा (इ) घर (ई) जीवन

१०. तल दिइएको अनुच्छेदबाट चारओटा बुँदाहरू टिपी एक तृतीयांशमा सारांश गर्नुहोस् । (२+२ = ४)
नेपाललाई सगरमाथाको देशका साथै नदीनालाको देश पनि भनिन्छ । नेपालमा ठुला मझौला र साना गरी छ हजारभन्दा बढी खोलानालाहरू बग्दछन् । यीमध्ये कतिपय स्रोतहरू हिमालयका हिमजलबाट परिपोषित भएका छन् । नेपालबाट बग्ने नदीनालाहरूबाट १७० अरब क्युबिक मिटर पानी बहने गर्दछन् । यो जलप्रवाह गङ्गा नदीमा मिली बङ्गालको खाडीमा पुग्दछ । यस पानीबाट हामीले खास उपयोगिता लिन नसकेका मात्र होइनौं अपितु आफ्नो देशको मूल्यवान् माटालाई समेत यसले देशबाहिर पुऱ्याएको कुरा सर्वविदितै छ । यसरी सम्भाव्य आर्थिक मेरुदण्डका रूपमा रहेको जलसम्पदालाई उपयोगमा ल्याई देशमा विद्यमान खाद्यान्न, ऊर्जा र अन्य समस्याहरूको निराकरण गर्नु आजको चुनौती रहेको छ । देशको आर्थिक विकासका लागि विद्युत् शक्ति महत्त्वपूर्ण र सर्वोपरि देन हुन सक्छ । नेपालमा उपलब्ध जलसम्पदाबाट प्रचुर मात्रामा जलविद्युत् शक्तिको विकास गर्ने गुन्जायस भएको र कोइला, ग्याँस, खनिज, तेल आदि अन्य शक्तिको स्रोत पनि पत्ता लागिसकेको हुँदा यी सबै ऊर्जा शक्तिको विकास गर्नेतर्फ जोड दिएर अघि बढ्नु आजको समयको माग हो ।
११. 'युनाइटेड युवा क्लब' ललितपुरले आफ्नो क्लबको पाँचौं वार्षिक दिवसको अवसरमा सञ्चालन गर्न गइरहेको एकदिने स्वास्थ्य शिविर कार्यक्रमसम्बन्धी सूचनाको नमूना तयार पार्नुहोस् । ४
१२. 'खच्चपदार्थको मिसावट' शीर्षकमा १५० शब्दसम्मको टिप्पणी लेख्नुहोस् । ४
१३. शिक्षित युवाहरूको बहदो विदेश पलायनलाई कसरी रोक्न सकिएला ? १२५ शब्दसम्ममा आफ्नो प्रतिक्रिया लेख्नुहोस् । ४
१४. तलका दुबै प्रश्नको उत्तर लेख्नुहोस् । (४+४ = ८)

(अ) दिइएको कवितांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् ।

नाका थुनी नेपालीलाई कसले छेक्न सकेथ्यो र
हिमालको हिमनदी कसले रोक्न सकेथ्यो र
वीर पुर्खा ! तिम्रै रगत नेपालीका नसाभरि
उही गीत उही गौरव चन्द्रसूर्य ध्वजाभरि ।

प्रश्नहरू

- (क) चन्द्रसूर्य ध्वजामा कस्तो गौरव अङ्कित छ ?
(ख) हाम्रा पुर्खालाई हिमनदीसँग तुलना गर्नुको कारण के हो ?

(आ) दिइएको कथांश पढी सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस् :

"किसुन भाइ ! यो दुईतीन बरसमा गाउँमा धेरै उथलपुथल भयो । गए साल रोपाइँको बेलामा हामीले चार किलो बनीको कुरालाई लिएर हडताल गर्थौं । सुरुमा त सब राम्रै थियो । तीन दिनसम्म काम ठप्प भयो । हामीले फेकन र शनिचरलाई अगुवा बनाएका थियौं । पछि उनीहरूले धोखा दियो र धनीहरूसँग मिल्यो । चार चार मन धान दिन्छु भनेका थिए रे र त्यै लोभमा हडताल बिच्काइदियो । पछि त्यही कुरालाई लिएर हामीले तिनीहरूलाई केरकार गर्थौं, भगडाफसाद भयो र हामीले उनीहरूलाई आफ्नो पाटीबाट हटाइदियो । पछि मालिकहरूले पनि एक मनभन्दा बढी धान दिएन रे । त्यसपछि उनीहरू छुट्टै पाटी बनाएर बस्या छन् । हडताल पनि बिच्कहाल्यो, न बनी बह्यो, उल्टै हाम्रो एकता टुट्यो ।"

प्रश्नहरू

- क) गाउँलेहरूको एकता टुटाउन मालिकहरूले के कस्ता योजना बनाएका थिए ?
ख) परिछनहरूले गरेको बन्दहडतालबाट के शिक्षा पाइन्छ ?

१५. 'संस्कृतिको नयाँ यात्रा' पाठको आधारमा नेपाली संस्कृतिका सबल र दुर्बल पक्षहरूको समीक्षात्मक विश्लेषण गर्नुहोस् । ८
१६. दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्दसम्ममा नघटाई निबन्ध लेख्नुहो । ८
- (क) विद्यार्थी र राजनीति
(ख) म प्रधानमन्त्री भएँ भने

दोस्रो त्रैमासिक परीक्षा - २

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : ३०

समूह : ख

सबै प्रश्नहरूको उत्तर दिनुहोस् :

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. तल दिइएको अनुच्छेद हेरी गाढा वर्णहरूको घोषत्व र उच्चारण प्रयत्न छुट्याई लेख्नुहोस् : ३
परिछन पनि पहिले गोठालो थियो, लगभग छसात वर्षकै उमेरदेखि । चौधपन्ध्रको किशोर वय नहुँदै बनी कमाउन थाल्यो र पछि हली बस्यो,
२. शुद्ध पारी पुनर्लेखन गर्नुहोस् : ३
जीवन एउटा प्रवाहसील नदि हो यो सामुद्रिक नावीकहरूको यात्रा जस्तै हो, जसलाई हामी निरन्तर दौडाइ रहेका हुँदा रहेछौं ।
३. रेखाङ्कन गरिएका पदहरूको पदवर्ग पहिचान गरी लेख्नुहोस् : २
देशभिन्न रोजगारीको सिर्जना गर्नका लागि उद्योग व्यवसाय सञ्चालनार्थ राज्यले निजी क्षेत्रलाई प्रोत्साहन गर्न सके हाम्रो अर्थव्यवस्था मजबुत बन्न सक्छ ।
४. तल दिइएका प्रश्नका उत्तर दिनुहोस् : (२+२ = ४)
क) दिइएका अनुच्छेदबाट दुईओटा तत्सम र तद्भव शब्द पहिचान गरी लेख्नुहोस् :
वास्तावमा मलाई हिजो दाँत र कान धेरै दुखेको थियो । प्रकृति र वातावरणसम्बन्धी कार्यक्रम भएर पनि म सहभागी हुन सकिनँ ।
ख) तल दिइएका शब्दहरूलाई शब्दकोशको क्रममा मिलाएर लेख्नुहोस् :
जल चाँदनी इनार क्षमता
५. दिइएको अनुच्छेदबाट एउटा अनुकरणात्मक शब्द, एउटा उखान र एउटा टुक्का पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् : ३
परीक्षाको निकट पुग्दा पनि छोरछोरीलाई तातो नलागेको देखेर इलमीको भागमा माछा र मासु अल्लेको भागमा आँसु भनेर सम्झाएँ । जति सम्झाउँदा पनि कानमा तेल हालेर बस्नेहरू देख्दा आफूलाई आफू ताक्छ मुढो बन्बरो ताक्छ घुँडो भइरहेको छ । धरधरी रोएर बस्नु मात्र बाँकी छ । तरतरी पसिना चुहाएर यिनीहरूकै लागि यत्रो दुःख गरेको के काम भो र ।
६. तलका प्रश्नको उत्तर लेख्नुहोस्: (२+२ = ४)
क) दिइएको अनुच्छेदबाट दुईओटा उपसर्ग व्युत्पन्न र दुईओटा प्रत्यय व्युत्पन्न शब्द खोजी तिनको निर्माण प्रक्रियासमेत देखाउनुहोस्:
नेपाली समाजको विविधता संसारकै आकर्षणको केन्द्रबिन्दु बनेको छ । यहाँको भौगोलिक विविधताले जोकोही लोभिन्छन् । यहाँका स्रोत र साधनको सदुपयोग हुन सके सुनमा सुगन्ध थपिने थियो नि ।
ख) तलको अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह र दुईओटा द्वित्व शब्द पहिचान गरी दोहोरिएको अंश देखाउनुहोस् :
विदेशविदेश भनेर मात्र पनि हुँदैन । त्यहाँ गएर पैसा कमाएर भविष्य बनाउने कुरा कल्पनातीत हो । बरु दुःखसुख गरेर आफ्नै गाउँठाउँमा खेतीपाती गर्दा मनगरे आयआर्जन गर्न सकिन्छ । घरपरिवारसँग सँगसँगै रहेर जाउलोसाउलो खाई ससानो घरबारीको लालपुर्जा आफ्नै नाममा हुँदा कति आनन्द आउँछ ।
७. तलका प्रश्नको उत्तर दिनुहोस् : (२+२ = ४)
क) दिइएको अनुच्छेदलाई पुलिङ्ग भए स्त्रीलिङ्ग र स्त्रीलिङ्ग भए पुलिङ्गमा परिवर्तन गरी पुनर्लेखन गर्नुहोस्:
मामाले विदेशबाट माइजूलाई उपहार ल्याइदिनुभयो । माइजू उपहार पाएपछि मख्ख पर्नुभयो । छोराले बुबालाई मोबाइल किनिदिन भन्यो । भाइले मोबाइल मागेपछि बहिनीले पनि विदेशबाट आएका बुबालाई स्कुटी किनिदिन आग्रह गरिन् ।
ख) तलका वाक्यहरूलाई आवश्यकताअनुसार एकवचन भए बहुवचन र बहुवचन भए एकवचनमा परिवर्तन गर्नुहोस्:
दिनेश व्यापार व्यवसायमा लागेको छ । हामीले उसलाई बाटो देखाएका थियौं । उसले पनि कुरा बुझेको छ । ऊ कहिल्यै दुःख नपाउला ।
८. तलका प्रश्नको उत्तर दिनुहोस् : (२+२ = ४)
क) दिइएको वाक्यलाई सङ्गति मिलाई पुनर्लेखन गर्नुहोस् :
उसकी भाइ बिदामा पोखरा घुम्न गएछन् । उसले त्यहाँ आफ्ना पुराना साथी भेटेछन् । मेरा भाइका साथीले उसलाई सबैतिर घुमाउनु भएछ । भाइ पनि साथीसँग घुम्न पाउँदा खुसी भइन् ।
ख) तलका गद्यांशबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तार र दुईओटा विधेय विस्तार पद पहिचान गरी लेख्नुहोस्:

मेरी कान्छी दिदीकी सानी छोरी डोल्मा गाउँको विद्यालयमा अध्ययन गर्छे । आँखामा राख्दा पनि नबिभाउने स्वभाव भएकी उसले आपत्विपत्मा परेका सबैलाई सघाउँछे । यसपालिको त्रैमासिक परीक्षामा पनि ऊ प्रथम भएकी थिई । सबैले उसलाई माया गर्छन् ।

९. दुवै प्रश्नको उत्तर लेख्नुहोस् :

(४+४ = ८)

क) दिइएको अनुच्छेद पढी सोधिएको प्रश्नको छोटो उत्तर दिनुहोस् :

हाम्रो समाज मूर्त र अमूर्त संस्कृतिको मिश्रण हो । हाम्रा गाउँ तथा सहरमा प्राचीन सभ्यताका धरोहर यत्रतत्र छन् । साकेला, चासोक, च्याबुङ र धान नाचमा रमाउने मन हुडकेली, सोरठी र मारुनीमा त्यतिकै रमाउँछ । देउडा र घाटुले भौगोलिक सीमा नाघेर बास्ना छरेका छन् । चान्दी, डाँडी, हनुमान र पञ्चबुद्ध नृत्यहरू हाम्रा मुटुका ढुकढुकी बनेका छन् । शास्त्रीय र लोक नृत्य, गीत र वादनमा हाम्रा अनन्य सम्पदा छन् । स्याब्रो, तिजिले सखिया, सन्थालर सरायसँग मितेरी लाउँछन् । भुओ, खैजडी, बालुन, साँगिनी र लाखे पहाडी सौन्दर्य बनेका छन् । बाली लाउँदा, धित्र्याउँदा, दाई गर्दा गाइने गीतहरू पुनर्जीवनको आस गर्दै छन् । गन्धर्व, चर्या, खाँडो र गाथाहरू कुनाकन्दरामा जीवितै छन् । यहाँ भाषाको भण्डार छ । संस्कार, रीतिरिवाज र परम्पराका पारखीहरू हाम्रा गाउँमा भुल्छन्, सहरमा रमाउँछन् । खानपान र पहिरनमा जातीय, क्षेत्रीय र सामुदायिक विविधता छन् । मन्दिर, विहार, मस्जिद, गिर्जाघर, गुरुद्वार, थान र मार्गस्थाहरू हाम्रा आस्थाका केन्द्र हुन् । हामी भाषा, धर्म, संस्कृति र परम्परामा बहुल छौं तर आपसमा सहिष्णु छौं । यो नै विश्वमा हाम्रो अनुपम पहिचान हो ।

प्रश्नहरू

- क) हाम्रो मन के के कुरामा रमाउँछ ?
ख) कस्ता गीतहरूले पुनर्जीवनको आस गर्दै छन् ?
ग) खानपान र पहिरनमा के कस्ता विविधता छन् ?
घ) कुन कुरा हाम्रो अनुपम पहिचान हो ?

ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

कुनै निश्चित भूभागसम्म फैलिएर रहेका रुखबिरुवा मात्र भएको भूमिलाई वन वा जङ्गल भनिन्छ । वन वा जङ्गलमा अनेक किसिमका रुखपात, भ्यास र झाडीहरू रहेका हुन्छन् । यो अनेक किसिमका जङ्गली जनावर, चराचुरुङ्गी र किराफट्याङ्ग्राहरूको वासस्थल पनि हो । नेपालको तराईतिरको जङ्गलमा साल, सतिसाल, टिक, मसला, सिसौ, शिरीष, खयर, साज, सिम, हरो, बरो, जमुना, बकाइनो, निमपत्ती, फलेदो, बयर, कदम, अंगेरी, पुटुकी, भोर्ला, बाँस आदि पाइन्छन् भने पहाडी र हिमाली भेगतिर उतिस, पैँयु, काफल, चिउरी, सुन्तला, नासपति, सल्लो, धुपी, देवदार, खनिउँ, चिलाउने आदि पाइन्छन् । नेपाली जङ्गलमा स्याल, मृग, बाघ, भालु, चितुवा, गैंडा, हात्ती, घोरल, ब्वाँसो, खरायो, जरायो, वनेल, चित्तल, अर्ना, निल गाई, फ्याउरो, न्याउरी मुसा, दुम्सी, लोखर्के, सालक, गोहोरो, बाँदर, ढेंडु, जस्ता जनावरदेखि लिएर अजिङ्गर, सर्प, बिच्छी, माकुरो आदि पनि जङ्गलमै रहन्छन् । कोइली, चिबे, सारौँ, धनेस, ढुकुर, लाटोकोसेरो, मयूर, काग, फिस्टा, लुईचे, कालिज, ठेउवा, सुगा, हुट्टियाउँ, भुँडीफोर, गिद्ध, चिल, डाँफे, मुनाल, काँडेभ्याकुर, मैना, भँगेरा, कर्मी चरा जस्ता अनेकनेक पन्छीहरू पनि जङ्गलमै रमाउँछन् । काँडेभ्याकुर नेपालमा मात्र पाइने पन्छी हो ।

प्रश्नहरू

क) साल र अंगेरी कहाँ पाइन्छ ?

- अ) पहाड आ) भित्री मधेस इ) तराई ई) हिमाल

ख) कस्तो भूमिलाई जङ्गल भनिन्छ ?

- अ) रुखबिरुवा मात्र भएको आ) रुखबिरुवा र भ्याउँ भएको
इ) भ्यास र झाडी भएको ई) पानी नै पानी भएको

ग) नेपालको तराई क्षेत्रमा कस्तो रुख पाइन्छ ?

- अ) उतिस र पैँयु आ) सल्लो र धसपी इ) हरो र बरो ई) चिउरी र सुन्तला

घ) नेपालमा मात्र पाइने सानो चरा कुन हो ?

- अ) मयूर आ) मैना इ) काँडेभ्याकुर ई) सारौँ

१०. तलको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश लेख्नुहोस् :

(२ + २ = ४)

दलित वर्ग नेपालका सामाजिक इन्जिनियर र आविष्कारक पनि हुन् । यस वर्गका मानिसहरूले धातु, सौन्दर्य, वस्त्र, सङ्गीत तथा नृत्य, वातावरणको क्षेत्रमा विशेष दक्षत्व, दक्षता र कौशल हासिल गरेका छन् । मानवको आवश्यकताअनुसार नयाँ नयाँ आविष्कार पनि गर्दै आएका छन् । मानव समाजलाई समृद्ध पार्ने काम उनीहरूबाट हुँदै आएको छ । बसो लगाएर विश्वविद्यालय र तालिम केन्द्रहरूमा सिक्नुपर्ने ज्ञान र सिप दलित समुदायमा परम्परागत

सिकाइबाट नै विकास भएको छ । परम्परागत पेसामा दक्षता हासिल गरेका र त्यही पेसा गर्न चाहनेहरू सेवाभावपरक अभियानमा सक्रिय बने । यसबाट उनीहरूले अर्थोपार्जन गर्न सकेनन् । यसले उनीहरूलाई थप वृत्तिविकासको अवसर प्राप्त भएन । दलित समुदायमा हातमुख जोर्न धौधौको अवस्था रहयो । यसकारण उनीहरू दमन, हेपाइ र आत्मसम्मानको अभावका कारण चाहेर पनि नयाँ ज्ञान र सिपको प्रवर्धनमा लाग्न सकेनन् । दलित समुदायले नयाँ पेसा र रोजगारी रोज्ने स्वतन्त्रताको उपयोग गर्न पाएनन् । आफ्नो क्षमता र प्रतिभालाई दबाएर राख्न विवश भए । यसले उनीहरूलाई विपन्नतातर्फ धकेल्यो ।

११. हालै बजारमा आएको सिंहदरबार वैद्यखानाबाट उत्पादित जीवन आरोग्य नामक जडीबुटी तेलको विज्ञापनको सचित्र नमुना तयार पार्नुहोस्: ४

१२. 'महिला हिंसा' शीर्षकमा १५० शब्दसम्मको टिप्पणी लेख्नुहोस् । ४

१३. नेपालमा वातावरण प्रदूषणले निम्त्याएका समस्याहरूको कसरी समाधान गर्न सकिएला ? १२५ शब्दसम्म आफ्नो प्रतिक्रिया लेख्नुहोस्: ४

१४. तलका दुबै प्रश्नको उत्तर लेख्नुहोस् : ८

अ) दिइएको कवितांश पढी सोधिएका प्रश्नहरूको दिनुहोस् :

कुन पहाडले कुन खोलाले तिम्रो गति छेकेथ्यो र
वीर पुर्खा ! कुन आँधीले तिम्रो यात्रा रोकेथ्यो र
गरुडको भैं वेग तिम्रो कुन आकाशले बाँध्न सक्यो
पौरखले रच्यो नेपाल ! पहाड तराई जुट्न सक्यो ।

प्रश्नहरू

(क) नेपालीहरूको कस्तो पौरखले नेपालको रचना भएको हो ?

(ख) कवितांशका आधारमा हाम्रा वीर पुर्खाको गौरव गाथाको वर्णन गर्नुहोस् ।

आ) दिइएको निबन्धांश पढी सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस् :

वीरगन्जको यात्रामा देखेका धान खेत र चौधरी काकाका घरको माघीको माछा र परिकार आज पनि मेरो स्मृतिमा ताजै छ । सिराहाकी यादव साथीको घरका छठ पर्वको अतिथि बनेको अनुभूति पनि जिउँदो छ । उदयपुरकी राई बहिनीको परिवार र तिनको संस्कृतिले पनि लोभिएकै हुँ । रोल्पाका मगर साथीको घरमा पनि पुगेकी हुँ र त्यहाँको संस्कृतिको परिचय पनि पाएकै हुँ । धेरै समयपछि बर्दियामा मनाएको माघीले पनि मलाई तानेकै छ । हामी के हिमाल, के तराई, के पहाड, एउटै साभा संस्कृति निर्माणको समयमा छौं र भिन्नता र भेदबाट मुक्त समाजको निर्मितिमा छौं । मेरो छ दशक लामो यस यात्रामा परिवर्तन देखेकी छु र रमाएकी पनि छु । यति भएर पनि म अझै सन्तुष्ट छैन । नयाँ समाज र नयाँ संसारको खोज मेरो जीवनयात्रा हो । यो यस्तो यात्रा हो, जसले सांस्कृतिक सत्यलाई स्वीकार गरोस् र सांस्कृतिक न्यायलाई स्थापना गरोस् । "वसुधैव कुटुम्बकम्" को संस्कृतिलाई स्थापित गरोस् । एउटा उज्यालो बाटाको यो यात्रा निरन्तर र अविचलित गतिमा अघि बढिरहोस् । म त यस यात्राकी साक्षी मात्रै हुँ, अबको नयाँ पुस्ताले नयाँ बाटो बनाओस् । नयाँ पुस्ता एउटा नयाँ उज्यालो हो र तिनका आँखामा मैले देखेको उज्यालो ज्योति यही हो ।

प्रश्नहरू

क) माथिको निबन्धांशमा कस्तो संस्कृतिको चर्चा गरिएको छ ?

ख) नयाँ पुस्ताले कस्तो संस्कृति निर्माण गर्न गर्न निबन्धकारले अनुरोध गरेका छन् ?

१५. 'त्यो फेरि फर्कला ?' कथामा सामाजिक, आर्थिक र प्राकृतिक परिवेशको चित्रण कसरी गरिएको छ ? ८

१६. दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्द नघटाई निबन्ध लेख्नुहोस् : ८

क) समाज परिवर्तनमा युवाको भूमिका

ख) मलाई मनपर्ने खेल

सेन्ट अप परीक्षा - २०७९

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : ३०

समूह : क

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्ने छ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. दिइएको अनुच्छेदका रेखाङ्कित वर्णहरूको उच्चारण स्थान र घोषत्व छुट्याई लेख्नुहोस् : ३

जलवायुका कृटिबन्धभिन्न विभिन्न प्रकारका पारिस्थितिक प्रणालीहरू पहिचान गर्न सकिन्छ ।

२. शुद्ध गरी पुनर्लेखन गर्नुहोस् : ३
स्याम ले भन्यो, काठमाडौं बल्ल सुन्दर नगरि बन्न लागेको छ ?
३. अनुच्छेदमा रेखाङ्कन गरिएका शब्दको पदवर्ग पहिचान गरी लेख्नुहोस् : २
नेपालको सुन्दरताको धेरै पक्ष प्राकृतिक सुन्दरता हो भन्ने मान्यता धेरै छ तर यो मात्र सम्पूर्ण भने होइन ।
४. दिइएका प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)
(क) तल दिएको अनुच्छेदबाट दुई दुईओटा तत्सम र आगन्तुक शब्द पहिचान गरी लेख्नुहोस् :
मासिक आमदानीले साप्ताहिक खर्च पनि नचलेपछि कृष्ण सहरमा बसेर जागिर खानुभन्दा पसल खोलेर खाने निर्णयमा पुगेको छ ।
(ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :
केशव, काग, क्षमा, कैलो
५. तलको अनुच्छेदबाट तीनओटा परिभाषिक शब्द पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् : ३
योगको सुरुवात महर्षि पतञ्जलिले गरेका हुन् । उनले योगका आठ अङ्गको चित्रण गरेका छन् । त्यसमा यम, नियम, आसन प्राणायाम, ध्यान धारणा, समाधि आदि पर्दछन् । हामीले हाम्रो शरीर स्वस्थ राख्न दैनिक योगाभ्यास गर्नु राम्रो मानिन्छ ।
अथवा
दिइएको अनुच्छेदबाट एउटा अनुकरणात्मक शब्द, एउटा उखान र एउटा टुक्का पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् :
नेपालको विकास फटाफट गर्नुपर्छ भन्ने विचारसहित खोलेका नयाँ पार्टीले पनि पार्टीगत स्वार्थमा लागेर मेरो गोरुको बाह्रै टक्का जस्तो प्रवृत्ति देखाएकाले जनता वाक्क भएका छन् । राजनैतिक बेथितिले गर्दा दिक्क भएर विदेश जाने युवायुवतीको लर्को लागेको देख्दा मेरो मन कटक्क खान्छ । यो कुरा नेताले समयमै बुझ्न नसके श्रम गर्ने उमेरका युवायुवती सबै विदेश गए भने अधि सम्भे सदा सुखी पछि सम्भे सदा दुःखी भनेको यही रहेछ भन्दै टाउकोमा हात राख्नुपर्ने हुन्छ ।
६. कुनै दुई प्रश्नको उत्तर दिनुहोस् । (२ + २ = ४)
(क) तलको अनुच्छेदबाट दुईओटा उपसर्ग र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :
रोजगारीको समस्याका कारण सुयोग प्रदेश गएको थियो । प्रदेशमा जोखिमपूर्ण काम गर्दा दुर्घटनामा परेर अकालमै ज्यान गुमाउन परेको थियो । उसकै आर्थिक उपार्जनमा बाँचेको परिवार भएकाले उसको मृत्युपछि आर्थिक अभावका कारण परिवारका सदस्य पीडित हुन पुगेका थिए ।
(ख) तलको अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह गर्नुहोस् र दुईओटा द्वित्व शब्द पहिचान गरी दोहोरिएको अंश छुट्याउनुहोस् :
महर्षि जनकले जनकपुरमा अयोध्यावासी रामचन्द्रको विवाह सीतासँग धूमधामले गराइदिए । यो विवाहको चर्चा कानैकान देशविदेशमा पुग्यो । जन्ती लिएर बाटैबाटो आउँदै गर्दा परशुरामले रामलाई भने, “ए अयोध्यावासी राम ! त्यो नक्कली धनुषसनुस भाँचे भन्दैमा धेरै मख्ख नपर । यो धनुष उचालेर देखाऊ अनि मात्र जान पाउँछौं ।”
(ग) तलको अनुच्छेदबाट चारओटा सन्धियुक्त शब्द पहिचान गरी सन्धि विच्छेद गर्नुहोस् :
हिमालय शमशेर जवरा नेपाल राष्ट्र बैङ्कका प्रथम गभर्नर हुन् । केही दिन अगाडि भएको उनको मृत्युमा उनलाई राष्ट्र बैङ्कमा स्वागत गर्दाको क्षण सम्झँदै श्रद्धाञ्जली दिने काम भयो । हिमाली देशका हामी जन्म र मृत्युको निरन्तर प्रक्रियालाई मनन् गर्दै यस्ता ऐतिहासिक व्यक्तित्वको सम्मानमा लाग्नुपर्छ भन्दै सूर्यास्तपछि सबै आ-आफ्नो घर फर्क्यौं ।
७. दिइएका दुवै प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)
(क) तल दिइएको अनुच्छेदलाई पुलिङ्ग भए स्त्रीलिङ्ग र स्त्रीलिङ्ग भए पुलिङ्गमा परिवर्तन गर्नुहोस्:
मामाले विदेशबाट माइजूलाई उपहार ल्याइदिनुभयो । माइजू उपहार पाएपछि मक्ख पर्नुभयो । छोराले बुबालाई मोवाइल किनिदिन भन्यो । दाइले मोवाइल मागेपछि दिदीले पनि विदेशबाट आएका बुबालाई स्कुटी किनिदिन आग्रह गरिन् ।
(ख) दिइएको अनुच्छेदलाई प्रथम पुरुष भए द्वितीय पुरुष द्वितीय पुरुष भए प्रथम पुरुषमा परिवर्तन गर्नुहोस् :
मैले तिमीलाई बजारबाट तरकारी ल्याउन भनेको थिएँ । तिमीलाई कपडा पनि ल्याउन भनेको थिएँ । तिमीसँग कुरा भएपछि म काकाको घरमा गएँ । त्यहाँ केही समय बसेर फर्किएँ ।
८. दिइएका प्रश्नहरूको उत्तर दिनुहोस् : (२ + २ = ४)
(क) तलको गद्यांशबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तार र विधेय विस्तार पद पहिचान गरी लेख्नुहोस् :
लक डाउनका बेलामा हामीले राहत बाँड्यौं । यस कामबाट सबै हर्षित भए । हामीले पीडितहरूको समस्या बुझ्यौं । समस्या समाधान हुने भएपछि उनीहरू ताली बजाउँदै नाचे ।

अथवा

दिइएको अनुच्छेदलाई सङ्गति मिलाई लेख्नुहोस् :

मेरो बुबा सहरमा बस्छ। ऊ सबैको भलो चाहन्छ। सहरबाट अग्लो हिमालहरू देखिदैन। तिमी हिमाल हेर्न गएको छ।

(ख) तल दिइएको वाक्यलाई करण भए अकरण र अकरण भए करणमा परिवर्तन गर्नुहोस् :

उनीहरू पाथीभरा घुम्न गएनछन्। सबैले पाथीभराको दर्शन गरेनछन्। मचाहिँ उक्त यात्रामा सहभागी भएँ। फेरि पनि यस्तो अवसर आउला।

अथवा

दिइएका वाक्यहरूलाई प्रत्यक्ष भए अप्रत्यक्ष र अप्रत्यक्ष भए प्रत्यक्ष कथनमा परिवर्तन गर्नुहोस् :

कर्तव्यले भन्यो, “समाजको अवस्था दयनीय छ।” समाजमा विकासको नयाँ परिभाषा चाहिएको छ भनेर उसले भन्यो। कृष्णले भन्यो, “परिभाषा बदल्दैमा समाजको समस्या समाधान हुँदैन।” म पनि समाज परिवर्तनका लागि खटिन्छु भनेर सरोजले भन्यो।

९. दुवै प्रश्नको उत्तर दिनुहोस् :

(४ + ४ = ८)

(क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर दिनुहोस् :

आयोडिनले शरीरको मेटाबोलिक दर नियन्त्रण गर्नुदेखि गलगाँड, लुलालङ्गडा मन्दमस्तिष्क, कम सुन्ने, पुङ्को हुने आदि विकृतिहरूलाई नियन्त्रण गर्नमा ठूलो भूमिका खेल्दछ। आयोडिनको कमीबाट हुने गलगाँडबाट शारीरिक विकृति मात्र देखिएको हुन्छ। स्पष्ट रूपमा यसबाट उत्पन्न हुने देख्न नसकिने मानसिक विकृति निकै भयानक हुन्छ।

आयोडिन पानी र खाने कुराहरूबाट प्राप्त गर्न सकिन्छ र यसको आवश्यकता शारीरिक गठन, वृद्धिको स्थिति, गर्भावस्था र स्तनपान गराउने आमामा आयोडिनको सञ्चित भण्डार खाली हुँदै जान्छ र पछि जन्मने बच्चाहरू धेरै कमजोर र रोगग्रस्त भएर जन्मन सक्छन्। अतः गर्भवती र स्तनपान गराउने आमाले अत्याधिक मात्रामा आयोडिनयुक्त खाना खानु आमा र बच्चा दुवैका लागि आवश्यक छ।

आयोडिनको कमी हुने कारणमा धेरैपल्ट सुत्केरी हुनु, खानामा गाढा हरिया सागपात समावेश नहुनु मुख्य मानिन्छ। आयोडिनको स्रोतमा गाढा हरिया सागपात, सामुद्रिक खानेकुरा, सामुद्रिक पानी, समुद्रको छेउछाउमा उम्रिएका खानेकुरा, दुध, माछा आदि पर्दछन्।

प्रश्नहरू

(अ) आयोडिनको मुख्य भूमिका के हो ?

(आ) आयोडिनको कमीले निम्त्याउने प्रमुख खतरा के हो ?

(इ) गर्भवती महिलालाई आयोडिन किन बढी चाहिन्छ ?

(ई) आयोडिनका स्रोतहरू के के हुन् ?

(ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

वातावरणीय प्रदूषण एक प्रमुख समस्या हो। वातावरणीय प्रदूषणबाट प्रत्यक्ष तथा अप्रत्यक्ष रूपमा मानिस, जीवजन्तु, वनस्पति, भूप्रकृति सबैमा असर पुऱ्याई हानि-नोक्सानी जस्ता क्रियाकलाप हुन्छन्। यसैलाई वातावरणीय प्रदूषण भनिन्छ। प्रदूषणबाट वातावरणीय तत्वहरूमाथि प्रतिकूल असर पर्दछ। फलस्वरूप यसले मानव स्वास्थ्य एवम् जनजीवनमा समेत प्रतिकूल प्रभाव पर्दछ। प्रदूषण अन्तर्गत मुख्य रूपमा वायुप्रदूषण, जलप्रदूषण, भूप्रदूषण र ध्वनि प्रदूषण पर्दछन्। पृथ्वीको वायुमण्डलमा रहेका ग्याँसहरूको प्राकृतिक संरचनामा अन्य हानिकारक ग्याँसहरूको मिश्रण हुन गई वायुको गुणस्तर ह्रास हुन जान्छ। वायुप्रदूषण खासगरी उद्योग तथा सवारी साधनहरूलगायत अन्य क्षेत्रमा हुने इन्धनको प्रयोगबाट उत्पन्न हुन्छ। वायुप्रदूषण मुख्यतया प्राकृतिक तथा मानवजन्य कारणबाट हुन्छ। त्यस्तै पानीको शुद्ध अवस्थामा जैविक, रासायनिक वा अन्य प्रकारको दूषित पदार्थको सङ्क्रमण भई पानीको गुणस्तरमा ह्रास आउँछ।

प्रश्नहरू

(क) प्रतिकूल शब्दको अर्थ कुन हो ?

(अ) हितकारी

(आ) परिस्थिति अनुसारको

(इ) अहित गर्ने

(ई) सुविधाजनक

(ख) प्रदूषण अन्तर्गत नसमेटिने कुरा कुन हो ?

(अ) जलप्रदूषण

(आ) ध्वनिप्रदूषण

(इ) वायुप्रदूषण

(ई) प्रकाश प्रदूषण

(ग) वातावरणीय प्रदूषण भनेको के हो ?

(अ) वातावरणमा उल्लेखनीय ह्रास आउनु

(आ) वातावरणमा परिवर्तन आउनु

(इ) वातावरण सफा हुनु

(ई) वातावरण स्वच्छ हुनु

(घ) पृथ्वीको वायुमण्डलमा रहेका ग्याँसहरूको प्राकृतिक संरचनामा अन्य हानिकारक ग्याँसहरूको मिश्रण हुन गई वायुको गुणस्तर ह्रास हुन जान्छ, भन्ने वाक्यमा रहेको ‘प्राकृतिक’ कस्तो शब्द हो ?

अ) उपसर्ग व्युत्पन्न आ) द्वित्व व्युत्पन्न इ) प्रत्यय व्युत्पन्न ई) समास व्युत्पन्न

१०. तलको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश लेख्नुहोस् : (२ + २ = ४)

बौद्ध मतमा वस्तु तथा विषयलाई हेर्ने तरिकाहरूको प्रतिनिधित्व गर्ने पाँच प्रकारका चक्षुहरूको आलङ्कारिक प्रयोग पाइन्छ। यसमा पहिलो मानवचक्षु हो। मानवचक्षु भनेको सामान्य भौतिक चाक्षुष पर्यवेक्षण र त्यसमार्फत् प्राप्त प्रत्यक्ष ज्ञान हो। दोस्रो दिव्य चक्षु हो। दिव्य चक्षुले मानवीय भनेका सूक्ष्म परिवर्तनप्रति हुने तीव्र अन्तर्दृष्टितर्फ सङ्केत गर्दछ। तेस्रो प्रज्ञाचक्षु हो। प्रज्ञाचक्षुभित्र नै विज्ञानचक्षु समाविष्ट छ, किनभने प्रज्ञाचक्षुले वस्तुहरूमा तर्कसङ्गत प्रकाश पार्ने, तिनको अमूर्तीकरण गर्ने र तिनमा अन्तर्निहित सार्वभौम नियमहरूको आविष्कार गर्ने संज्ञानात्मक मानसिक सामर्थ्यको प्रतिनिधित्व गर्दछ। चौथो धर्मचक्षु र पाँचौँ बुद्धचक्षु हो। धर्मचक्षु र बुद्धचक्षु जीवनको सत्यलाई प्रज्ञाचक्षुबाट सम्भव भएभन्दा अझ बढी गहिराइपूर्वक र अझ बढी मानवतावादी दृष्टिकोणबाट अन्तर्भेदन गर्ने सूक्ष्मदर्शी शक्ति नै हुन्। धर्मचक्षुको तात्पर्य सबै वस्तुलाई ती वस्तु वास्तवमा जस्ता छन् त्यस्तै रूपमा हेर्ने क्षमता हो। यो चक्षु कसैका जीवनलाई परिष्कृत तुल्याई र यस प्रकारको परिष्कृत जीवनलाई सबै वस्तुको अवलोकन गर्ने दर्पणका रूपमा प्रयोग गरी प्राप्त गर्न सकिन्छ। बुद्धचक्षुको तात्पर्य चाहिँ जीवनको र विश्वब्रह्माण्डका सबै पक्षको स्पन्दनशील ऊर्जालाई पहिचान्ने, सूक्ष्मदर्शी अन्तर्दृष्टिका साथै ती विभिन्न पक्षलाई आफैँभित्र समाहित गर्नु अनि पुनः सक्रिय तुल्याइएको यस जीवनशक्तिलाई प्रयोग गरी जीवन, समाज र विश्वब्रह्माण्डका यथार्थको प्रत्यक्ष ज्ञान गर्नु पनि हो।

११. कुनै एक प्रश्नको उत्तर दिनुहोस् : ४

(क) युनाइटेड एकेडेमीले सञ्चालन गर्ने 'युनाइटेड ट्यालेन्ट हन्ट' प्रतियोगितामा सहभागी हुन अनुरोध गरी निकालिने सूचनाको नमुना निर्माण गर्नुहोस्।
(ख) यति एयरलाइन्सको पोखरामा दुर्घटनामा परेर ज्यान गुमाउन पुगेका मृतकहरूका लागि दिइने श्रद्धाञ्जलीको नमुना निर्माण गर्नुहोस्।

१२. कुनै एक प्रश्नको उत्तर दिनुहोस् : ४

(क) आफ्नो विद्यालयले आयोजना गरेको स्वागत कार्यक्रमको विवरण समेटि १५० शब्दसम्मको प्रतिवेदन लेख्नुहोस्।
(ख) 'मेरो देश मेरो गौरव' विषयमा १५० शब्दसम्मको वक्तृता लेख्नुहोस्।

१३. नेपाली समाजमा प्रचलित दाइजो प्रथालाई कसरी नियन्त्रण गर्न सकिनेला ? १२५ शब्दसम्ममा आफ्नो प्रतिक्रिया लेख्नुहोस् : ४

१४. कुनै दुई प्रश्नको उत्तर लेख्नुहोस् : (४ + ४ = ८)

(क) दिइएको कवितांश पढी सोधिएका प्रश्नहरूको उत्तर दिनुहोस् :

कुन पहाडले कुन खोलाले तिम्रो गति छेकेथ्यो र
वीर पुर्खा ! कुन आँधीले तिम्रो यात्रा रोकेथ्यो र
गरुडको भैं वेग तिम्रो कुन आकाशले बाँध्न सक्यो
पौरखले रच्यो नेपाल । पहाड तराई जुट्न सक्यो !

प्रश्नहरू

(अ) नेपालीहरूको कस्तो पौरखले नेपालको रचना भएको हो ?
(आ) कवितांशका आधारमा हाम्रा वीर पुर्खाको गौरव गाथाको वर्णन गर्नुहोस्।

(ख) दिइएको कथांश पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

बल्ल सानीका आँखा उघ्रे। त्यसलाई आफ्नो अङ्ग-प्रत्यङ्ग कसो खुम्चिन लागेको छाला देखेर बितेको दीर्घ समयको सम्झना भयो र भन्नु प्रत्यक्षमा त्यसले देखी, यात्राको तीन चौथाइ पूरा भएपछि त्यसले पाइछ आशा समाप्तिको साथसाथै जीवन सन्ध्या पनि आइपुगेको रहेछ। दुनियाँ अर्कै भएको रहेछ। यस वर्तमानसँग त्यस सानीमा कुनै प्रकारको सामञ्जस्य रहेनछ। आशाले अझसम्म बुद्धिलाई धोखा दिइरहेको थियो। सानी शिथिल क्लान्त भै हुन गई। उभिइरहनमा शरीर साह्रै नै गलेको जस्तो भान हुन लाग्यो र त्यसै द्वारमा थचक्क बसी।

प्रश्नहरू

(अ) सानीको प्रतीक्षा कसरी समाप्त भयो ?
(आ) यस अनुच्छेदमा सानीको कस्तो मनोविज्ञान प्रस्तुत भएको छ ?

(ग) दिइएको संवादांश पढ्नुहोस् र सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस् :

जीवनको गाह्रोसाह्रो पनि भावनासँग नै जोडिने कुरा हो नि। सामान्यतः मन परेको काममा कमाइ थोरै भए पनि चित्त बुभ्छ। फेरि मैले जुन पद्धतिको खेतीपाती गरिरहेको छु, त्यसबाट हाम्रो परिवार मज्जाले चलेको छ। सामान्यतः हामी मल, विउ, औषधी बजारबाट किन्दैनौं। रासायनिक खेती भएको भए किसानको धेरै पैसा बजारतिर जान्थ्यो। यो त प्राकृतिक खेती हो। त्यसैले हामी उत्पादन कार्यका लागि प्रायः केही किन्दैनौं। उपज भने खुर्खुरु बेच्छौं। उत्पादनमा

लागत कम छ तर उत्पादित वस्तुको मूल्य चाहिँ धेरै पाइन्छ । स्वास्थ्यमैत्री हुनाले हाम्रो उत्पादन सजिलैसँग यहाँबाटै विक्रि, बजारको कुनै समस्या छैन ।

प्रश्नहरू

(अ) प्राकृतिक खेती गर्दा के फाइदा हुन्छ ?

(आ) “मन परेको काममा कमाइ थोरै भए पनि चित्त बुझ्छ ।” यस कथनलाई पुष्टि गर्नुहोस् ।

१५. कुनै एक प्रश्नको उत्तर दिनुहोस् :

८

(क) नेपालमा विद्यमान संस्कृतिका सबल र दुर्बल पक्षको चर्चा गर्नुहोस् ।

(ख) नेपालको पर्यावरणले पर्यटनलाई कसरी सहयोग पुर्याएको छ ?

१६. दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्दसम्ममा नघटाई निबन्ध लेख्नुहोस् :

८

(क) जेष्ठ नागरिकप्रति मेरो दायित्व

(ख) पर्यटन उद्योगको महत्व

(ग) अबको युग विज्ञान र प्रविधिको युग

सेन्ट अप परीक्षा - २०७९

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५ उत्तीर्णाङ्क : ३०

समूह : ख

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्ने छ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. दिइएको वर्णहरूको उच्चारण प्रयत्न र प्राणत्व पहिचान गर्नुहोस् :

३

क, स, ल

२. दिइएको अनुच्छेदलाई शुद्ध बनाई पुनर्लेखन गर्नुहोस् :

३

जिवन एउटा प्रवाहशील नदी हो यो सामुद्रिक नाविकहरूको यात्रा जस्तै हो, जसलाई हामी निरन्तर दउडाइरहेका हुँदा रहेछौं ।

३. रेखाङ्कन गरिएका पदहरूको पदवर्ग पहिचान गर्नुहोस् :

२

मेरो जीवन चङ्गाभैँ आकाशमा उडाइरहन मन छ तर त्यो आकाश खुला हुन जरुरी छ ।

४. दुवै प्रश्नको उत्तर लेख्नुहोस् :

(२ + २ = ४)

(क) तल दिइएको अनुच्छेदबाट दुईओटा तत्सम र दुईओटा तद्भव शब्द पहिचान गरी लेख्नुहोस् :

वास्तवमा हिजो मलाई पेट दुखेको थियो । प्रकृति र वातावरणसम्बन्धी कार्यक्रम भए पनि म सहभागी हुन असमर्थ थिएँ । पेट धेरै दुखेकोले मेरा हात-खुट्टा, छाला, मासु सबै गलेका थिए । मेरा चर्मचक्षु लोलाएका थिए ।

(ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :

ऋण, अनार, आँप, ऋषि

५. कुनै एक प्रश्नको उत्तर लेख्नुहोस् :

(क) दिइएको अनुच्छेदबाट तीनओटा परिभाषिक शब्द पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् :

३

राधेश्यामले स्कुले जीवनमा सङ्क्रामक रोगका बारेमा पढेको थियो तर कुन रोगको खोप छ भन्ने थाहा थिएन । कोरोना भाइरस आएपछि क्यान्सर, कुपोषण, इबोला, वर्डफ्लुजस्ता रोगको तथ्याङ्कलाई धेरै पछाडि पाउँ धेरै मान्छे यस रोगबाट सङ्क्रामित भए ।

(ख) तलको अनुच्छेदबाट एकओटा अनुकरणात्मक शब्द, एकओटा टुक्का र एकओटा उखान पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् :

३

श्यामला आफ्नो हुँदोखाँदोको जागिर छोडेर डि.भी. पन्यो भन्दै अमेरिका गएकी थिई तर चोक्टा खान गएकी बुढी भोलमा डुबेर मरी भने भैँ राम्रो काम नपाएर धुरुधुरु रूँदै नेपाल फर्केर हात बाँधेर बस्नुपरेको छ । मान्छेहरू विदेशमा रूखबाट पैसा टिप्न पाइन्छ र तालुमा आलु फल्छ भन्ने सम्भरेर आँखा चिम्लेर विदेसिन्छन् तर हुने हार दैव नटार भने भैँ दुःखी जीवनले जहाँ गए पनि दुःख नै पाउँदा रहेछन् । यस्तो कुरा थाहा पाएपछि सबैले खुरुखुरु आफ्नो काम गर्नुपर्छ ।

६. तलका कुनै दुई प्रश्नको उत्तर दिनुहोस् :

(२ + २ = ४)

(क) तलको अनुच्छेदबाट दुईओटा उपसर्ग व्युत्पन्न शब्द र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :

विज्ञान र प्रविधिको युग भए पनि हामीले पूर्वीय संस्कृति भुल्नु हुँदैन । गाउँले होस् वा सहरिया कसैले पनि जन्मभूमिको ममता बिर्सन हुँदैन । आफ्नो जन्मभूमिको विकास गर्नका लागि पर्यटन क्षेत्रको प्रचारप्रसार गर्नु उचित हुन्छ ।

(ख) तलको अनुच्छेदबाट दुईओटा समस्त शब्द र दुईओटा द्वित्व शब्द पहिचान गर्नुहोस् र समस्त शब्दको विग्रह तथा द्वित्व शब्दको दोहोरिएको अंश छुट्याउनुहोस् :

आ-आफ्ना क्षेत्रमा कर्तव्यनिष्ठ भएर समर्पित नरनारीले नै जीवनपथमा सफलताका सिँढीहरू फटाफट चढ्न सक्छन् । भैँभगडा र कलहसलहमा पलपल खेर फाल्नेहरूले अरुलाई परेका बेलामा मरमद्दतका माध्यमबाट परोपकार गर्न एवम् आशीर्वचनको पञ्चामृत पान गर्न सक्तैनन् ।

(ग) तलको अनुच्छेदबाट चारओटा सन्धियुक्त व्युत्पन्न शब्द पहिचान गरी सन्धि विच्छेद गर्नुहोस् :

उपेन्द्र, राजेन्द्र र सुरेन्द्र हिमालयको सौन्दर्य हेर्न भनी पोखरा गए । त्यहाँ पाहुनाको स्वागत-सत्कार देखा सबै दङ्गा परे । विदेशी पाहुना खुसी हुँदै फर्केको देखेर हामी पनि मख्ख पर्‍यो ।

७. दिइएका प्रश्नको उत्तर दिनुहोस् :

(२ + २ = ४)

(क) तलको अनुच्छेदलाई पुलिङ्ग भए स्त्रीलिङ्ग र स्त्रीलिङ्ग भए पुलिङ्गमा परिवर्तन गर्नुहोस् :

एउटा मिहिनेती युवक विदेश गयो । उसले त्यहाँ आफ्नै देशकी एउटी युवतीलाई भेट्यो । युवतीले उसलाई स्वदेशमै पसिना बगाउनु पर्ने सल्लाह दिई । युवकले मिलेसम्म तत्कालै स्वदेश फर्किने सोच्यो ।

(ख) दिइएको अनुच्छेदलाई एकवचन भए बहुवचन र बहुवचन भए एकवचनमा परिवर्तन गरी पुनर्लेखन गर्नुहोस् :

उसले गाउँमा पुरानो मूर्ति देख्यो । त्यो मूर्ति राम्रो थियो । उनीहरूले मूर्तिको चित्र खिचेर हामीलाई पनि देखाए । त्यो मूर्ति देखेर म खुसी भएँ ।

८. कुनै एक प्रश्नको उत्तर लेख्नुहोस् :

४

(क) तलका गद्यांशबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तारक र विधेय विस्तारक पद पहिचान गरी लेख्नुहोस् :

बिहानैदेखि काममा गएका खेतालाहरू दिनभर काम गरेर घर फर्के । सहयोगी मनका धनी उनीहरू मिहिनेती छन् । उनीहरूको व्यवहार राम्रो छ । सबैले उनीहरूको प्रशंसा गरे ।

अथवा

पद सङ्गति मिलाई पुनर्लेखन गर्नुहोस् :

मेरो भाइ गाउँको घरमा बस्छन् । ऊ असल बानीको हुनुहुन्छ । उनले धेरै काम गर्छ । उनको काम हेरेर सबै खुसी हुन्छ ।

(ख) दिइएका वाक्यलाई करण भए अकरण र अकरण भए करणमा परिवर्तन गर्नुहोस् :

हामी सधैं इमानदार बन्नु पर्दैन । कहिले कहिले बेइमानी पनि गर्नु हुन्छ । गुरुले सधैं यसै भन्नुहुन्छ र ? तिमीले यो कुरा सुनेका छैनौ ?

अथवा

दिइएका वाक्यहरू प्रत्यक्ष भए अप्रत्यक्ष र अप्रत्यक्ष भए प्रत्यक्ष कथनमा परिवर्तन गर्नुहोस् :

सीतारामले भन्यो, “हामी सगरमाथा चढ्नेछौं ।” उसको कुरा सुनेर रविले सल्लाह गर्ने कुरा गर्‍यो । उमेशले भन्यो, “छिट्टै चढौं है ।” महेशले यसपालि हिउँदमा चढ्ने कुरा गर्‍यो ।

९. दुवै प्रश्नको उत्तर दिनुहोस् :

(४ + ४ = ८)

(क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर दिनुहोस् :

चुहिएको गाग्रामा पानी हाल्दै भने प्रयास गर्नुलाई अस्वस्थ अवस्था सम्झनुपर्छ । प्वाल परेको गाग्रिबाट पानी चुहिएर गाग्रिभित्र पानी घट्टै गएभैं मानिसको शरीरबाट पानी खेर जान्छ । यसरी पानी नुन र तागत खेर जाने प्रक्रियालाई जलवियोजन भनिन्छ । धेरै जलवियोजन भयो भने मानिस मर्न सक्दछ । भाडापखाला हुँदा मर्ने मुख्य कारण जलवियोजन नै हो । नचुहिएको गाग्रामा पानी भन्यो भने रित्तिन पाउँदैन र भरिइरहन्छ । त्यस्तै औषधी पानी खुवाउँदै गर्‍यो भने भाडापखालाबाट खेर गएको पानी र नुन आपूर्ति हुन्छ र बिरामी मृत्युबाट बाँच्दछ । यसरी तीनचार दिनसम्म औषधी-पानी खुवाएपछि बिरामीको भाडापखाला आफैँ निको हुन्छ । यसरी खेर गएको नुन र पानी आपूर्ति गर्ने प्रक्रियालाई पुनर्जलीय उपचार भनिन्छ । पुनर्जलीय उपचारले बिरामीको पखाला तत्कालै रोकिँदैन तर जलवियोजनमा सुधार गर्छ । बिरामीलाई मर्नबाट बचाउँछ । भाडापखाला लागेको बिरामीको मुख्य उपचार नै जलवियोजन हुन नदिई रोगीको प्राण जोगाउनु हो ।

प्रश्नहरू

(अ) जलवियोजन भनेको के हो ?

(आ) भाडापखालाका बिरामी कसरी ठिक हुन्छन् ?

(इ) के गर्दा भाडापखालाका बिरामीको ज्यान जोगाउन सकिन्छ ?

(ई) ‘जलवियोजन’ र ‘आपूर्ति’ शब्दको निर्माण प्रक्रिया देखाउनुहोस् ।

(ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

अहिले म सम्झन्छु, हाम्रो देशमा अन्न मात्र होइन, मृत सञ्जीवनी बुटीहरू उम्रन्छन् । हिमालको हिउँ पगलेर बग्ने कञ्चन जलराशिमा संसारकै मानिसहरूको प्यास मेटाउन सक्ने सामर्थ्य छ । ठुलो भूखण्ड सिञ्चन गर्ने र प्रकाशमय बनाउन सक्ने क्षमता छ । संस्कृति र भाषाको विशाल भण्डार छ । तातो चाहिए पैतालिस डिग्रीको तापक्रम र चिसो चाहिए शून्य डिग्रीभन्दा धेरै तलसम्मको हावापानी छ । तल जानपरे समुद्रको छेवैसम्म पुगिन्छ, माथि चढ्दा संसारकै सबैभन्दा अग्लो सगरमाथा छ । यी सब हुँदाहुँदै पनि हाम्रो देशको विकासले किन गति लिन सकिरहेको छैन ? यस्ता सबै सवालहरूको जवाफ एउटै रहेछ, र त्यो जवाफ हो - त्यो देशका जतनाहरूको दृढ इच्छाशक्ति र इमान्दार प्रयत्न ।

प्रश्नहरू

- (क) हाम्रो देशमा के उम्रन्छ ?
 (अ) पानी (आ) जलराशि (इ) मृतसञ्जीवनी बुटी (ई) तापक्रम
- (ख) 'दृढ' शब्दको अर्थ के हो ?
 (अ) आफ्नो विचारमा अडिग रहने (आ) मनभित्रको इच्छा (इ) नयाँ कुरा (ई) बल प्रयोग
- (ग) नेपालको जलराशीमा कस्तो सामर्थ्य छ ?
 (अ) संसारकै मानिसहरूको प्यास मेटाउन सक्ने (आ) बाढीपहिरो ल्याउन सक्ने
 (इ) विकासको मूल फुटाउन सक्ने (ई) चिसो बनाउन सक्ने
- (घ) 'इच्छाशक्ति' को निर्माण प्रक्रिया कुन हो ?
 (अ) उपसर्ग प्रक्रिया (आ) समास प्रक्रिया (इ) द्वित्व प्रक्रिया (ई) प्रत्यय प्रक्रिया

१०. तलको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश लेख्नुहोस् : (२ + २ = ४)

आफ्नो विश्वास आफैँले गर्न सक्नु नै आत्मविश्वास हो । आत्मविश्वासी व्यक्तिको जीवन सफल हुन्छ । सफलता र आत्मविश्वासका बिचमा नडर र मासुको जस्तै सम्बन्ध रहेको हुन्छ । जीवनमा आइपर्ने विभिन्न समस्या समाधान गरी आफूलाई सफल मानिस सावित गर्न आत्मविश्वासी बन्नु पर्दछ । आत्मविश्वासी बन्न प्रत्येक व्यक्तिमा साहस, धैर्य र सकारात्मक सोच चाहिन्छ । मानिसका जीवनमा अनेक समस्याहरू आइपर्दछन् तर पनि त्यस्ता समस्याहरूको समाधान गर्न मानिस सक्षम हुनुपर्दछ । आत्मविश्वास लिन सकेमा हरेक प्रकारका समस्याबाट मुक्त हुन सकिन्छ । मानिसले जीवनमा आइपर्ने कठिनाइहरूलाई समाधान गर्न हिम्मतको साथ लिनुपर्छ । आत्मविश्वास भएमा जस्तोसुकै समस्या पनि सहजै समाधान हुन्छन् ।

११. कुनै एक प्रश्नको उत्तर दिनुहोस् : ४

- (क) तपाईंको विद्यालयले आयोजना गर्न लागेको फुटबल प्रतियोगितामा सहभागी हुन अनुरोध गर्दै एउटा सूचनाको नमुना लेख्नुहोस् ।
 (ख) तपाईंको विद्यालयले आयोजना गरेको बास्केटबल प्रतियोगितामा प्रथम स्थान प्राप्त गर्न सफल 'युनाइटेड युवा विद्यार्थी समूह'लाई विद्यालयले दिने बधाईको नमुना बनाउनुहोस् ।

१२. कुनै एक प्रश्नको उत्तर दिनुहोस् : ४

- (क) तपाईंको विद्यालयले आयोजना गरेको 'रोबोट मेला'को दिनका मुख्य घटनालाई समेटि १५० शब्दसम्मको एउटा प्रतिवेदन तयार पार्नुहोस् ।
 (ख) 'महिला हिंसा समस्या र समाधान' शीर्षकमा १५० शब्दसम्मको एउटा वक्तृता लेख्नुहोस् ।

१३. 'शान्ति नै विकासको संवाहक हो' भन्ने भनाइप्रति तपाईंको विचार के कस्तो छ ? प्रतिक्रिया दिनुहोस् । ४

१४. तलका मध्ये कुनै दुई प्रश्नको उत्तर लेख्नुहोस् : (४ + ४ = ८)

(क) तलको कवितांश पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

डिगर्चामा डोब तिम्रो चिसो हिउँभित्र होला
 वेत्रावती किनारभरि पौरखको चिनो होला ।
 वीर पुर्खा ! तिमीलाई मितेरीले मात्रै बाँध्यो
 सागर तरी संसारभरि वीर गोर्खा रगत बग्यो ।

प्रश्नहरू

- (अ) माथिको कवितांशमा हाम्रा पुर्खाहरूका बारेमा के भनिएको छ ?
 (आ) 'सागर तरी संसारभरि वीर गोर्खा रगत बग्यो ।' यस कथनको तात्पर्य के हो ?
 (ख) दिइएको नाट्यांश पढी सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस् :

ठिक भन्नुभो बाबा । सन्तानको सुख र शिक्षाका लागि भन्दै म रातदिन खटिँ तर मैले मेरो छोरालाई समय दिइँन । उससँग बसेर उसको पढाइका बारेमा कुरा गरिँन । उसका साथी को को छन् भनेर कहिल्यै सोधखोज गरिँन । ऊ कहाँ गयो, के गर्‍यो, के खायो भनेर ख्याल गरिँन । म त खालि मेरो व्यवसाय, बैठक आदि भनेर दौडधुप गरिरहेँ । उसले मागे जति पैसा दिइरहे तर ऊ त धेरै पहिलेदेखि दुर्व्यसनको सिकार भइसकेको रहेछ र आज मैले यो दिन भोग्नुप्यो ।

प्रश्नहरू

(अ) यस नाट्यांशमा वक्ताले आफ्ना के कस्ता कमजोरी रहेको स्विकारेका छन् ?

(आ) यस नाट्यांशमा व्यक्त समस्या कसरी समाधान गर्न सकिएला ?

(ग) दिइएको प्रवन्धांश पढी प्रश्नको उत्तर लेख्नुहोस् :

विहङ्गम दृष्टिले विचार गर्दा सम्पूर्ण पृथ्वी एउटा घर हो, गृह हो । यहाँ जल, स्थल, वायु, आकाश र तेज (प्रकाश) यी पाँच तत्व (पञ्चतत्व) का विच जलचर, स्थलचर, नभचर र सबै चराचर आफ्नो जीवन बिताउँदछन् । पृथ्वीलाई छोडेर अन्य ग्रहमा जीवात्माको अस्तित्व भेटिएको छैन । त्यसैले हामी सबैले यहीं बाँच्नुपर्छ, यहीं मर्नुपर्छ । यो सिवाय अरु जाने ठाउँ छैन । पृथ्वीको पारिस्थितिक प्रणालीलाई बिथोलिएको भने हाम्रै अस्तित्व सङ्कटमा पर्छ । हालका दिनमा जलवायु परिवर्तनका विषयमा विशेष गरेर वायुमण्डल प्रदूषणका कारण पृथ्वी सतह अप्रत्यासित ढङ्गले तात्ने क्रमलाई लिएर विशेष चिन्ता र चासो हाम्रो सामु तेर्सिएको छ ।

प्रश्नहरू

(अ) पृथ्वी नै सबैको साभा घर हो, कसरी ?

(आ) वायुमण्डल प्रदूषणका कारण पृथ्वीको सतह अप्रत्यासित ढङ्गले तात्ने क्रमलाई लिएर किन चासो र चिन्ता बढेको छ ?

१५. कुनै एक प्रश्नको समीक्षात्मक उत्तर लेख्नुहोस् :

८

(क) 'गाउँको माया' कथामा कस्तो समाजको चित्रण गरिएको छ ?

(ख) सत्यनिष्ठा र समतामूलक समाजको स्थापनामा योगमायाले दिएको योगदानको चर्चा गर्नुहोस् ।

१६. कुनै एक शीर्षकमा २५० शब्दमा निबन्ध लेख्नुहोस् :

८

(क) प्राविधिक शिक्षा : आजको आवश्यकता

(ख) मलाई मनपर्ने खेल

(ग) नेपालमा पर्यटन व्यवसायको सम्भावना

सेन्ट अप परीक्षा - २०८०

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : ३०

समूह: क

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्ने छ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. दिइएको अनुच्छेदका रेखाङ्कित वर्णहरूको उच्चारण स्थान र प्राणत्व छुट्याई लेख्नुहोस् :

(३)

अप्रत्याशित भए पनि लगभग मूक नै घटेको त्यो घटना बिलकुलै स्वाभाविक थियो । यसमा कसैको दोष, द्वेष, अपराध थिएन तैपनि यस घटनाले सबैमा विभिन्न क्लेश नउब्जाई छोडेन ।

२. शुद्ध गरी पुनर्लेखन गर्नुहोस् : (३)
मानिशको दुःखको सिमा पुगेपछि संज्ञा हीनताको करुणामय आशीर्वाद त्यसले पाउँछ भन्छन् त्यसदीन महान सून्यताको अनुभव त मलाई भयो तर पीडाबोध भएन ।
३. अनुच्छेदमा रेखाङ्कन गरिएका शब्दको पदवर्ग पहिचान गरी लेख्नुहोस् : (२)
महेश ! आजभोलि गाउँमा सूचना प्रकाशन गर्न पहिलाजस्तो अखबार र रेडियोको मात्र भर पर्नुपर्दैन र ?
४. दिइएका प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)
(क) दिइएको अनुच्छेदबाट दुई दुईओटा तत्सम र तद्भव शब्द पहिचान गरी लेख्नुहोस् ।
कृष्णको साथी परिछन पनि पहिले गोठालो थियो, लगभग छसात वर्षकै उमेरदेखि । चौधपन्द्रको किशोरवय नहुँदै बनी कमाउन थाल्यो र पछि हली बस्यो, सायद ज्यालामा ।
(ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :
वंश, कंश, हंश, केश
५. दिइएको अनुच्छेदबाट तीनओटा पारिभाषिक शब्द पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् : (३)
राष्ट्रकवि माधव घिमिरे शास्त्रीय छन्दका कुशल स्रष्टा हुन् । विविध रस र अलङ्कारले चिटक्क पारिएका यिनका कविता काव्य उत्कृष्ट हुन्छन् ।

अथवा

दिइएको अनुच्छेदबाट एउटा अनुकरणात्मक शब्द, एउटा उखान र एउटा टुक्का पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् :

लोकसेवाको परीक्षामा प्रथम भएर आफ्नो नाक राखेपछि खुसी हुँदै आरभले छोरालाई भने, “हेर आरभ ! हुने विरुवाको चिल्लोपात भनेभौँ तिमि सानैदेखि खुरुखुरु मिहिनेत गरी पढ्थ्यौ । तिमिले उच्चशिक्षा पढाउने हाम्रो हैसियत थिएन तापनि तिम्रो क्षमता देखेर हामीले गाँस काटेर भए पनि तिमिले यो अवस्थासम्म ल्याइपुऱ्यायौ । अब तिमिले पनि आफू भलो त जगत् भलो भन्दै फटाफट राष्ट्रको सेवा गर्नुपर्छ ।”

६. कुनै दुई प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)
(क) तलको अनुच्छेदबाट दुईओटा उपसर्ग र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :
राष्ट्रिय राजनीतिक दलले विभिन्न समयमा देशलाई प्रयोगशाला बनाइरहे । कहिले संविधान बनाउने नाममा, कहिले आर्थिक समृद्धिका नाममा तर देशमा संविधान बने पनि राजनीतिक सभ्यता, संस्कृति र आर्थिक समृद्धि प्राप्त हुन सकिरहेको छैन भन्ने कुरा हिमाली देशका नेताले बुझेर पनि बुझ्नपचाइरहेका छन् ।
(ख) तलको अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह गर्नुहोस् र दुईओटा द्वित्व शब्द पहिचान गरी दोहोरिएको अंश छुट्याउनुहोस् :
हिजोआजका केटाकेटीहरू आफ्नो भविष्यका लागि रातदिन अध्ययन गर्न थालेका छन् । यसरी उनीहरूले आफ्नो कर्तव्य पूरा गरी अनुभवी अग्रजहरूसँग सरसल्लाह गर्दै अधि बढे व्यक्तिगत उन्नति निश्चित छ । ससाना कुरामा नअल्झी अधि बढ्न सके भोलिको सुखी भविष्य उनीहरूकै त हो ।
(ग) तलको अनुच्छेदबाट चारओटा सन्धियुक्त शब्द पहिचान गरी सन्धिविच्छेद गर्नुहोस् :
हाम्रा सञ्जय दाइ पर्यटकहरूलाई स्वागत सत्कार गर्न र वयोवृद्धहरूको सेवा सुश्रुषामा लाग्न अत्यन्त रुचि राख्छन् । यसबाट प्रेरित भएर कमाइधमाइ केही नभएका देवेन्द्रले पनि वृद्धाश्रममा गएर सहयोग गरेछन् ।

७. दिइएका प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)
(क) दिइएको अनुच्छेदलाई पुलिङ्ग भए स्त्रीलिङ्ग र स्त्रीलिङ्ग भए पुलिङ्गमा परिवर्तन गरी पुनर्लेखन गर्नुहोस् :
मेरी काकीको छोरो समाजसेवा भनेपछि हुरुकै हुन्छ । उसले आफूलाई समाजसेवामा सर्पित गरेको छ । गाउँमा आइपर्ने सानादेखि ठुला समस्यामा रातदिन नभनी सबैलाई सहयोग गरिरहन्छ । उसको उक्त कार्यलाई उसकी बहिनीले समेत साथ दिएकी छ ।
(ख) दिइएको अनुच्छेदलाई एकवचन भए बहुवचन र बहुवचन भए एकवचनमा परिवर्तन गरी पुनर्लेखन गर्नुहोस् :
उनीहरूले कृषि फर्म खोलेका रहेछन् । मलाई पनि नयाँ काम गर्ने रहर छ । तँ पनि केही गर्ने भए तँ र म सँगै गरौंला । हामीले मिलेर काम गर्न सकिन्छ भन्ने कुरा समाजमा देखाउनुपर्छ ।

८. तलका प्रश्नहरूको उत्तर दिनुहोस् : (२ + २ = ४)
(क) तलका गद्यांशबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तारक र विधेय विस्तारक पद पहिचान गरी लेख्नुहोस् :

हास्यव्यङ्ग्य कविले आफ्ना दर्शकलाई भरपुर मनोरञ्जन दिन खोज्छन् । उनीहरूको हास्यव्यङ्ग्यमा देशको अवस्था पनि भल्किन्छ । आफ्नो देशको बेथिति प्रस्तुत गर्नु उनीहरूको रहस्य नभई वाध्यता हो । देश चलाउँछु भनेर जिम्मा लिने नेताले राम्रोसँग काम गरे यस प्रकारको अवस्था हुने थिएन ।

अथवा

दिइएको अनुच्छेदलाई सङ्गति मिलाई पुनर्लेखन गर्नुहोस् :

उसको आमा बजार गएकी छे । उसकी भाइ पनि सँगै जाँदै छन् । त्यहाँबाट उनीहरूले मिठा फलफूल ल्याउँछे । तिमी पनि खान आइज है ।

(ख) दिइएको वाक्यलाई करण भए अकरण र अकरण भए करणमा परिवर्तन गरी अनुच्छेद पुनर्लेखन गर्नुहोस् :

मिरोजको साहित्यकार बन्ने चाहना छ । ऊ सधैं साहित्यिक पुस्तक पढ्छ । उसका कोही साथी छैनन् । ऊ कहिल्यै मनोरञ्जन गर्दैन ।

अथवा

तलका वाक्यहरूलाई प्रत्यक्ष कथनमा परिवर्तन गर्नुहोस् :

आरुषीले विदेश जाने कुरा गरी । उसका अभिभावकले तिमी स्वदेशमै बस भनेर सुझाव दिए । उसले स्वदेशमा आफ्नो भविष्य छैन भन्ने कुरा बताई । अभिभावकले उसलाई आफ्नो भविष्य आफैँ बनाउनुपर्छ, देशले बनाइदिने होइन भन्ने कुरा राखे ।

९. दुवै प्रश्नको उत्तर दिनुहोस् :

(४ + ४ = ८)

(क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर लेख्नुहोस् :

कुनै पनि आन्दोलनलाई मार्गदर्शन गर्न निश्चित विचार, सिद्धान्त र प्रतिबद्धताको आवश्यकता पर्दछ । अहिले महिला अधिकार र समानताका लागि हिंसा र अशान्ति होइन, सम्झौताको आन्दोलनबाट समाधान खोज्नुपर्छ । सचेत वर्गले महिलामाथि नकारात्मक रूपमा पारिएको सामाजिक प्रभावलाई परिवर्तन गराउनुपर्छ । प्रत्येक महिलाले आफूमाथि परेको अन्याय, अत्याचार र शोषणलाई प्रतिरोध गरी आफ्नो हक, अधिकार सुनिश्चित गरी कर्तव्यप्रति सजग हुनुपर्छ । यस अभियानमा महिला मात्र होइन, पुरुष पनि सामेल भएर सहयोग गर्नु आवश्यक छ । पुरुष र महिला दुवै पक्षको सहयोग र सद्भावनाबाट मात्र नारीवादी आन्दोलनलाई सबल ढङ्गले अगाडि बढाउन सकिन्छ । जसरी विश्वको कुनै पनि आन्दोलन नारी सहभागिताबिना सफल भएको छैन, त्यसैगरी महिला अधिकार र समानताको आन्दोलन पनि पुरुषको सहभागिताबिना सफल भएको छैन । महिलाहरू उत्पीडनको सिकार भएका हुन्छन् । उनीहरूले अत्याचार र शोषणको भुक्तमान सहेका हुन्छन् भने पुरुषहरूले महिलामाथि परेको त्यो शोषण अनुभूत गरेका हुन्छन् तर त्यो शोषण र भुक्तमानका कारक पुरुषहरू होइनन् । त्यसको कारक भनेको हाम्रो सामाजिक संरचना हो जसका आधारमा मूल्य र मान्यताहरू निर्धारित भएका छन् । समाजले महिला र पुरुषलाई लैङ्गिक विभेदका नाममा उनीहरूका जिम्मेवारी र दायित्व पनि फरक फरक बनाइदिएको छ, जसले महिलाहरूमाथि सधैं गलत प्रभाव पारिरहेको छ, तर नारीवादी आन्दोलन भनेर आज पूर्वीय र पाश्चात्य जगत्मा प्रशस्त भनाइहरू सुन्ने गरिन्छ र नारीवादलाई भिन्न भिन्न रूपमा बुझ्दै र बुझाउँदै आएको पनि पाइन्छ ।

प्रश्नहरू

(अ) 'नारीवाद' लाई कसरी बुझ्न सकिन्छ ?

(आ) नारीवादी आन्दोलनका लागि पुरुषको सहयोग किन आवश्यक छ ?

(ई) महिलामाथि गलत प्रभाव पार्ने कुरा केके हुन् ?

(इ) महिलामाथि हुने शोषणको कारक के हो ?

(ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

धेरै जना मिलेर एक हुनु एकता हो । एकता नै बल हो । धेरै जना मिलेपछि बल प्राप्त हुन्छ । कुनै पनि काम गर्ने शक्ति मिल्छ । एकता भनेको मिलेर बलियो हुनु हो । कुनै कुरामा सफल हुन एकता चाहिन्छ । एक जनाले उचाल्न नसक्ने भारी दुई जनाले सजिलै उचाल्न सक्छन् । दुई जनाले नसक्ने चार जनाले उचाल्न सक्छन् त्यसैले 'एकले थुकी सुकी, सयले थुकी नदी' भनिएको हो । हाम्रा हातका औंलामा भन्दा मुठीमा बढी शक्ति हुन्छ । मौरीहरू एकै ठाउँमा मिलेर बस्छन् । एकजुट भएर काम गर्छन् । फूलबाट रस जम्मा गरी मह बनाउँछन् उनीहरूको गोलामा कसैले आक्रमण गरे एकजुट भई जाइ लाग्छन् । हामी मानिस पनि आआफ्ना परिवारमा मिलेर बस्छौं । मानिसमानिसबिचको एकताले परिवार बन्छ । परिवारपरिवारबिचको एकताले समाज बन्छ । त्यसरी नै समाजहरू एकत्रित हुँदै जाँदा गाउँ, सहर र देश बन्दछ । एकताको बलले जस्तोसुकै काम गर्न आँट आउँछ त्यसैले एकता नै बल हो ।

प्रश्नहरू

(क) आक्रमण शब्दको अर्थ कुन हो ?

(अ) हस्तक्षेप

(आ) पराजित

(इ) बल

(ई) एकता

(ख) मानिसमानिसबिचको एकताले के बन्छ ?

(अ) सहर

(आ) समाज

(इ) परिवार

(ई) देश

(ग) मौरीहरू किन एकजुट भई जाइ लाग्छन् ?

(अ) गोलामा आक्रमण गरेमा (आ) रस फालिदिएमा (इ) एकता नभएमा (ई) एक भएमा

(घ) 'एक जनाले उचाल्न नसक्ने भारी दुई जनाले सजिलै उचाल्न सक्छन्' भन्ने वाक्यमा 'एक' कस्तो शब्द हो ?

(अ) नाम (आ) विशेषण (इ) क्रियायोगी (ई) नामयोगी

१०. दिइएको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश लेख्नुहोस् : (२ + २ = ४)

अमेरिकी सांस्कृतिक अध्ययनले स्थानीयतामा आधारित रही प्रारम्भदेखि नै वर्गभन्दा लैङ्गिक तथा जातीय मुद्दामा आफूलाई केन्द्रित गराउँदै आएको छ । सन् १९९० को दशकसम्म आउँदा अमेरिकी सांस्कृतिक अध्ययनमा ग्राम्सी, आल्थुसर, जेम्सन लगायतका मार्क्सवाद, नवमार्क्सवाद, उत्तरमार्क्सवाद, नारीवाद, जाति र जनजातीय सिद्धान्त, संरचनावाद, विशेषतः बाख्तिन र फुकोको उत्तरसंरचनावाद, विनिर्माणवाद, लकानको मनोविश्लेषण, लैङ्गिकता जस्ता विविध धारा र मान्यताको संयोजन भएको छ । यसरी विविध सिद्धान्त आफूमा समाविष्ट गरी अगाडि बढेको अमेरिकी सांस्कृतिक अध्ययनले साहित्यलाई पाठका रूपमा लिँदै कृतिमा रहेको शक्ति सम्बन्धको खोजी, परिधीय शक्तिको पहिचान, प्रतिनिधित्व र प्रतिरोधको क्षमतालाई प्रस्तुत गर्न थाल्यो र उपभोक्तावादी संस्कृतिको समेत अध्ययन गर्न थाल्यो । उपभोक्तावादी संस्कृतिले मानिसलाई वस्तुकरण र उसको स्वत्वको सामूहिक बजारीकरण गर्दछ । यसरी उपभोक्तावादी संस्कृतिले वस्तुलाई बढी उपभोग्य बनाउन मानिसको स्वमा पहिलो प्रहार गरी उसलाई बजारीकरण गरेको हुन्छ । त्यसको पहिलो प्रयोग मानिसको शरीरमाथि हुन्छ । पितृसत्तात्मक समाजमा पुरुष शरीरभन्दा महिला शरीरको बढी उपभोग भएको हुन्छ । वस्तुलाई बढी उपभोग्य बनाउनका लागि मानिसको शरीर त्यसमा पनि विशेषगरी महिला शरीर र यौनिक दुरुपयोग कसरी भएको छ भन्ने कुराको अध्ययन अमेरिकी सांस्कृतिक अध्ययनले गर्दछ ।

११. कुनै एक प्रश्नको उत्तर दिनुहोस् : (४)

(क) युनाइटेड माध्यमिक विद्यालय, ललितपुरका पूर्व विद्यार्थीहरूको वनभोज कार्यक्रमका लागि जारी गरिने सूचनाको नमुना तयार पार्नुहोस् ।

(ख) आफ्नो प्रिय साथीको जन्मदिनको अवसरमा दिइने शुभकामनाको नमुना तयार पार्नुहोस् ।

१२. कुनै एक प्रश्नको उत्तर दिनुहोस् : (४)

(क) तपाईं आफू संलग्न भई सम्पन्न गरेको वृक्षरोपण कार्यक्रमलाई समेटी १५० शब्दसम्मको प्रतिवेदन लेख्नुहोस् ।

(ख) 'काठमाडौंमा बढ्दो प्रदूषण' शीर्षकमा १५० शब्दसम्मको टिप्पणी तयार पार्नुहोस् ।

१३. भ्रष्टाचारलाई कसरी नियन्त्रण गर्न सकिने ? १२५ शब्दसम्ममा आफ्नो प्रतिक्रिया लेख्नुहोस् । (४)

१४. कुनै दुई प्रश्नको उत्तर लेख्नुहोस् : (४+४ = ८)

(क) दिइएको कवितांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

कुन पहाडले कुन खोलाले तिम्रो गति छेकेथ्यो र
वीर पुर्खा ! कुन आँधीले तिम्रो यात्रा रोकेथ्यो र
गरुडको भैं वेग तिम्रो कुन आकाशले बाँध्न सक्यो
पौरखले रच्यो नेपाल ! पहाड तराई जुट्न सक्यो ।

प्रश्नहरू

(अ) नेपालीहरूको कस्तो पौरखले नेपालको रचना भएको हो ?

(आ) हाम्रा वीर पुर्खाको गौरव गाथालाई कविताका आधारमा वर्णन गर्नुहोस् ।

(ख) दिइएको नाट्यांश पढी सोधिएका प्रश्नको छोटो उत्तर दिनुहोस् :

यो दुर्व्यसनको जडलाई उखेल्ने काम एउटा व्यक्तिले मात्र सक्दैन । यो अभियान असल छोराछोरीका अनि कर्तव्यनिष्ठ अभिभावकहरूको सामूहिक अभियान हो । यो अभियान एक सचेत नागरिकको हो । यो अभियान तपाईं र हाम्रो हो । त्यसैले यो काम सबै मिलेर गरौं ।

प्रश्नहरू

(अ) दुर्व्यसनको जरालाई किन एउटा व्यक्तिले मात्र उखेल्न सक्दैन ?

(आ) सचेत नागरिकको सामूहिक अभियानले समाजका समस्याहरू कसरी समाधान गर्न सकिन्छ ?

(ग) दिइएको कथांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

परिछन ! यसो भनेर किन मलाई लज्जित पाछो ? गाउँ तिमिहरूकै हो । तिमिहरूकै हँसिया, खुपी, कोदालो र पाखुरीका बलमा गाउँ बाँचेको छ, गाउँका इज्जत भनेका तिमिहरू नै हो । तिमिहरूकै आडमा गाउँ अभिमानी भएको छ । तिम्रो पाखुरीले यो खोलाको धारलाई त फर्काउँछ भने गाउँको इज्जत माथि नउठाउला त ...! किसुन भाइ ! तिमिलाई कुरामा जित्न सकिँदैन । खैर, जेहोस्, यसपालि महावीरजीको भन्डाको मेलामा हामी नाटक खेल्छौं । गाउँका घटनाहरू राखेर एउटा खुब राम्रो नाटक लेखिदेऊ ।

प्रश्नहरू

(क) 'तिम्रो पाखुरीले यो खोलाको धारलाई त फर्काउँछ भने गाउँको इज्जत माथि नउठाउला त ...!' भन्नुको तात्पर्य के हो ?

(ख) 'किसुन भाइ ! तिम्रीलाई कुरामा जित्न सकिँदैन' भनेर परिछनले किसनलाई किन भनेको हो ?

१५. कुनै एक प्रश्नको उत्तर दिनुहोस् : (८)

(क) नेपालको पर्यावरणले पर्यटनलाई कसरी सहयोग गरेको छ ? विवेचना गर्नुहोस् ।

(ख) सत्यनिष्ठा र समतामूलक समाजको स्थापनामा योगमायाले दिएको योगदानको समीक्षा गर्नुहोस् ।

१६. दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्दसम्ममा नघटाई निबन्ध लेख्नुहोस् : (८)

(क) अनुशासनको महत्त्व (ख) युवा र स्वरोजगार (ग) जलवायु परिवर्तन र यसको असर

सेन्ट अप परीक्षा - २०८०

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : ३०

समूह: ख

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्ने छ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

१. तल दिइएको अनुच्छेदका रेखाङ्कित वर्णहरूको उच्चारण प्रयत्न र घोषत्व छुट्याई लेख्नुहोस् : (३)

खोलो अचेल फेरि गाउँतिर सोभिएको रहेछ । यो खोलाले पनि गाउँलाई धुरुक्कै रुवायो मात्रै भने खोलाप्रति अन्याय ठहर्ला । यो खोलाले गाउँलाई पालेको पनि छ ।

२. शुद्ध गरी पुनर्लेखन गर्नुहोस् : (३)

आमाले भन्नु भयो "तिमिहरू पडेर सकेपछि के गर्छौं "

३. अनुच्छेदमा रेखाङ्कन गरिएको शब्दको पदवर्ग पहिचान गरी लेख्नुहोस् : (२)

आज उनले मलाई धेरै कुराहरू सोधे । उनले सोधेका कुराहरू मध्ये खासै धेरै बुझिँन । मैले केमा कुरा भयो भन्ने पनि राम्ररी बुझिँन । उनले फोनबाट बाँकी कुरा सुनाए ।

४. दिइएका दुवै प्रश्नको उत्तर दिनुहोस् : (२ + २=४)

(क) दिइएको अनुच्छेदबाट दुई दुईओटा तत्सम र आगन्तुक शब्द पहिचान गरी लेख्नुहोस् :

अखबारको पंक्तिबाट आँखा हटाएर मैले आगन्तुकपट्टि हेरेँ । ऊ अफिसको गेटमा उभियो उसका हातमा एउटा सादा लिफाफा र एक पाना कागज थियो । हल्ला मच्चाएर मेरो शान्ति भङ्ग गरिदिएको हुनाले आगन्तुक उपर मलाई अलिअलि रिस उठिरहेको थियो ।

(ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :

सँधियार, लक्ष्मी, अनिष्ट, आकर्षण

५. तल दिइएको अनुच्छेदबाट तीनओटा पारिभाषिक शब्द पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् : (३)

कृषिकै अध्ययन र अनुसन्धानमा लागेका कृषि वैज्ञानिकहरू, नीति निर्माताहरू जिम्मेवार पदाधिकारी तथा कर्मचारीहरू वा कृषि अभियन्ताहरूले पनि आफ्ना सन्तानलाई किसान बनाउन खोजेका छैनन् ।

अथवा

तल दिइएको अनुच्छेदबाट एउटा अनुकरणात्मक शब्द एउटा उखान र एउटा टुक्का पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् ।

"हुने विरुवाको चिल्लो पात भने भैँ विद्यालयकै नाक राख्दै राष्ट्रिय परीक्षा बोर्डको परीक्षामा प्रथम स्थान प्राप्त गरेको अनिलको सफलताबाट उसका अभिभावक खुसीले गद्गद् भए । अकबरी सुनलाई कसी लगाउनु पर्दैन भन्दै वरिपरिका स्कुलले "यो स्कुलले राम्रो नतिजा ल्याउन सक्दैन" भन्ने विद्यालयको मेख मारेकोमा आफूलाई धेरै खुसी लागेका कुरा विद्यालयका प्रधानाध्यापकले मुसुमुसु हाँसेर सबैलाई बताए ।

६. कुनै दुई प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)

(क) तल दिइएको अनुच्छेदबाट दुईओटा उपसर्ग र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :

वीर पुर्खा कविताले नेपालीहरूको वीरता र बहादुरीलाई देखाएको छ । नेपाली पुर्खाहरूको स्वाभिमान र देशभक्ति यस कविताको प्रमुख विषय भनेर आएको छ । मातृभूमिप्रतिको अटुट आस्था पनि यसको सन्देशमा प्रवाह भएको छ ।

(ख) तल दिइएको अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह गर्नुहोस् र दुईओटा द्वित्व शब्द पहिचान गरी दोहोरिएको अंश छुट्याउनुहोस् ।

सान्नानीको बानीव्यवहार देखेर हामी त छक्कै परेका छौं । उसका मृगनयनी आँखा, लजालु मुस्कान र लसकलसक हिँडाइले ककसलाई प्रभाव पारेको छ भन्ने कुराको हरहिसाब आआफ्नै तरिकाले राखेका छौं ।

(ग) तल दिइएको अनुच्छेदबाट चारओटा सन्धियुक्त शब्द पहिचान गरी सन्धिविच्छेद गर्नुहोस् :

“अतिथि देवो भवः” नेपाली संस्कृतिको सुन्दर पक्ष हो । आफ्नो घरमा आउने पाहुनाको स्वागत सत्कार गर्ने, दैनिक रूपमा आआफ्ना आस्थाका प्रतीकको स्मरण गर्ने, वयोवृद्धहरूको सेवा गर्ने, विद्यालयमा सदैव गुरुहरूको आदर गर्ने, देशको उन्नतिको संवाहक बनेर अगाडि बढ्ने संस्कृति अनादि कालदेखि आइरहेको छ ।

७. तल दिइएका प्रश्नको उत्तर दिनुहोस् :

(२ + २ = ४)

(क) दिइएको अनुच्छेदलाई पुलिङ्गा भए स्त्रीलिङ्गा र स्त्रीलिङ्गा भए पुलिङ्गमा परिवर्तन गरी पुनर्लेखन गर्नुहोस् :

उसले एउटा चिठी लेख्यो । उसले त्यसलाई खाममा राखेको छ । उसले भोलि त्यसलाई मकहाँ पठाउने छ । उसकी बहिनीले यो कुरा थाहा पाई ।

(ख) दिइएको अनुच्छेदलाई मध्यम आदरमा परिवर्तन गरी पुनर्लेखन गर्नुहोस् :

उहाँले रारामा पुराना साथीलाई भेटनुभयो । उहाँले राराको आँगनीमा बसेर चरा र जलचरहरूका बारेमा धेरैबेर कुरा गर्नुभयो । उहाँलाई साथीले पनि आफ्नो प्रगतिको कथा सुनाउनुभयो । साथीका कुरा सुनेर उहाँ दङ्ग पर्नुभयो ।

८. तलका प्रश्नहरूको उत्तर दिनुहोस् :

(२ + २ = ४)

(क) तलको गद्यांशबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तारक र विधेय विस्तारक पद पहिचान गरी लेख्नुहोस् :

युनाइटेड एकेडेमीमा कक्षा ११ मा पढ्ने विद्यार्थीहरूले जलस्रोत र ऊर्जा शीर्षकमा वक्तृत्वकला प्रतियोगिताको आयोजना गरेका थिए । मैले पनि यस कार्यक्रममा भाग लिएको थिएँ । म कार्यक्रमको अन्तिममा बोलें । सभाध्यक्षको भूमिकामा रहनुभएका प्रधानाध्यापकले पुरस्कार वितरण गरिसकेपछि आफ्नो मन्तव्य सहित कार्यक्रम टुङ्ग्याउनुभयो ।

अथवा

दिइएको अनुच्छेदलाई सङ्गति मिलाई पुनर्लेखन गर्नुहोस् :

मैले आमालाई ढोगी दियो । आमाले मलाई आशीर्वाद दिइन् । तिमीले पनि आमालाई ढोगिस् ? मेरो भाइले पनि ढोगे ।

(ख) दिइएको वाक्यलाई करण भए अकरण र अकरण भए करणमा परिवर्तन गरी अनुच्छेद पुनर्लेखन गर्नुहोस् :

आरम्भ मिहिनेत गरी आफ्नो काम गर्छ । उसले कहिल्यै पनि कामलाई बेवास्ता गर्दैन । उसको बानीव्यवहारबाट सबै खुसी छन् । सबैले आफ्ना छोराछोरीलाई ऊ जस्तै बनाउन चाहन्छन् ।

अथवा

तलका वाक्यहरूलाई प्रत्यक्ष कथनमा परिवर्तन गर्नुहोस् :

अनिरुद्धले साथीसँग वनभोज जाने कुरा गर्‍यो । साथीले केही दिनपछि जाने कुरा बतायो । अनिरुद्धले साथीलाई वनभोज पछि जाने कारण सोध्यो । साथीले आफू केही समयको लागि गाउँ जान लागेको कुरा बतायो ।

९. दुवै प्रश्नको उत्तर दिनुहोस् :

(४ + ४ = ८)

(क) तल दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर लेख्नुहोस् :

संस्कृतिभिन्न कुनै जातजातिको लवाइखवाइ भेषभूषा, भाषा, दर्शन, मान्यता र विश्वास लुकेको हुन्छ । जातीय विविधताभिन्न सांस्कृतिक विविधता हुन्छ । संस्कृतिको विशेषता जातीय पृथकता पनि हो । बहुजातीय मुलुकमा बहुसांस्कृतिक सम्पन्नता पाइन्छ, अनि यसको समन्वय गर्ने मुलुक सौन्दर्यमा श्रेष्ठ ठहर्छ । जहाँ सुन्दर फूल फुल्छन् त्यहाँ भमराहरू लट्ठिएर भुल्छन् । हाम्रो सांस्कृतिक उन्नयन सुमनकुञ्ज बन्न सके अभ्यागत मौरी र भमरा बनी भुम्मिन्छन् । हामी पराग र मधुरस बटुल्न सक्छौं । मौरीको लगनशीलता सापटी लिएर मह जम्मा गर्न सक्छौं । महको रस सुक्दैन । संस्कृति मधुरस हो । सभ्यता घर हो । हामी सुन्दर विश्ववागमा हृदयकर्षक घर बनाउन सक्छौं, हृदय केन्द्रमा सांस्कृतिक मधुरस जम्मा गर्न सक्छौं ।

प्रश्नहरू

(अ) संस्कृतिभिन्न के के लुकेको हुन्छ ?

(आ) बहुजातीय मुलुकमा के कस्ता विशेषता हुन्छन् ?

(इ) ‘संस्कृति मधुरस हो, सभ्यता घर हो’ भन्नुको तात्पर्य के हो ?

(ई) हामी कसरी मह जम्मा गर्न सक्छौं ?

(ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

स्वामी हंसानन्दले महायज्ञ थाल्नुभयो । वरपरका गाउँलेहरूले पनि यज्ञमा भाग लिए । त्यहाँ धार्मिक मेला नै लाग्यो । विस्तारै विस्तारै त्यहाँ आश्रम बन्न थाल्यो । उहाँले वेद पुराण आदि ग्रन्थको खुब अध्ययन गर्न थाल्नुभयो । उहाँको कुष्ठ रोग पनि निको भयो । उहाँको ख्याति बढ्दै गयो । उहाँ दीन दुखी, गरिब गुरुवालाई ज्यादै माया गर्नुहुन्थ्यो । सबै प्राणीको कल्याण चाहनुहुन्थ्यो । त्यसैले उहाँको दर्शन गर्न मानिसहरू आउन थाले । पछि उहाँलाई महाप्रभु भन्न थालियो । उहाँ श्री १०८ महाप्रभुको नामले

प्रख्यात हुनुभयो । महाप्रभुले स्वर्गद्वारीमा धेरै व्यवस्था मिलाउनुभयो । जग्गाजमिन जोडनुभयो । पूजापाठ विधि बनाउनुभयो । पाहुनाहरूको खाने बस्ने व्यवस्था पनि मिलाउनुभयो । उहाँले आफैँले दाड देउखुरीमा मौजा किन्नुभयो । सरकारबाट मौजा प्राप्त गर्नुभयो । अहिले आश्रमको नाममा पन्ध्र सय विघाभन्दा बढी जग्गा छ तर व्यवस्था मिलाउँदा मिलाउँदै महाप्रभुको वि.सं. १९९७ मङ्सिर महिनामा स्वर्गारोहण भयो ।

प्रश्नहरू

(क) 'मौजा' शब्दको अर्थ के हो ?

(अ) घर (आ) जग्गा (इ)वन (ई) गोठ

(ख) स्वामी हंसानन्दको दर्शन गर्न मानिसहरू किन आउन थाले ?

(अ) सबै प्राणीको कल्याण चाहने भएर (आ) कुष्ठ रोग निको भएर
(इ) धार्मिक मेला लागेर (ई) जग्गा जमिन जोडेर

(ग) पाहुनाहरूको खाने बस्ने व्यवस्था कसले मिलायो ?

(अ) स्वामी हंसानन्दले (आ) गाउँलेले (इ) सरकारले (ई)भक्तहरूले

(घ) 'पछि उहाँलाई महाप्रभु भन्न थालियो ।' भन्ने वाक्यमा 'पछि' कस्तो पद हो ?

(अ) नाम (आ) विशेषण (इ) क्रियायोगी (ई) नामयोगी

१०. तलको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश गर्नुहोस् :

(४)

आजको विश्वमा मानव जातिका लागि मानव अधिकार भन्ने कुरा अपरिहार्य विषय बन्न पुगेको छ । मानव अधिकारको अभावमा मान्छेको वैयक्तिक विकास सम्भव छैन । जब एउटा नागरिक आफ्ना अधिकारहरूबाट वञ्चित रहन्छ, तब त्यसको असर समाज र राष्ट्रले समेत भोग्नुपर्ने हुन्छ । मानव अधिकार कुनै एउटा व्यक्ति वा कुनै एउटा राज्यको मात्र सरोकारको कुरा होइन । यसको सम्मानमा संसारका हरेक व्यक्ति, समाज, राज्य एवम् अन्तर्राष्ट्रकै सहयोग अत्यावश्यक हुन्छ तापनि आफ्नो मुलुकमा मानव अधिकारलाई सम्मान गर्ने परिपाटी कायम गर्ने कि नगर्ने भन्ने विषय भने त्यसलाई सुदृढ पार्ने सरकारको नै सबैभन्दा महत्त्वपूर्ण भूमिका हुनु स्वाभाविक हो । जहाँ मानव अधिकारको सम्मान हुँदैन त्यहाँ प्रजातन्त्र पनि हुँदैन । जहाँ प्रजातन्त्र हुन्छ, त्यहाँ मानव अधिकारको सम्मान गर्नु अनिवार्य हुन्छ । मानव अधिकारलाई गौण विषय ठानेर र त्यसलाई बेवास्ता गरेर प्रजातन्त्रको कुरा गर्नु निरङ्कुशतालाई आत्मसात् गर्नु हो । विश्वका कतिपय मुलुकहरूमा प्रजातन्त्रका नाममा मानव अधिकारको अवहेलना हुँदै आएको छ । मानव अधिकारप्रति सम्मान दर्साउने प्रजातान्त्रिक संविधानको निर्माण भएको भए पनि व्यवहारमा त्यसको पालना नगरिएका प्रशस्तै उदाहरणहरू पाइन्छन् । यसबाट के कुरा बुझ्नु जरुरी छ भने संविधानमा मात्रै मानव अधिकारप्रति प्रतिबद्धता जाहेर गरेर वास्तविक रूपमा मानव अधिकारको सम्मान हुन सक्तैन । मानव अधिकारको सम्मानका लागि प्रजातान्त्रिक संविधानअनुसार स्थापित हुने सरकारको कार्यशैली पनि प्रजातान्त्रिक हुनुपर्दछ ।

११ कुनै एक प्रश्नको उत्तर दिनुहोस् :

(४)

(क) युनाइटेड एकेडेमीमा बास्केटबल प्रतियोगिता आयोजना गरिएको हुँदा उक्त आयोजनाको प्रमुख अतिथि शिक्षा, विज्ञान तथा प्रविधि मन्त्रीलाई प्रमुख अतिथिको रूपमा आमन्त्रण गरिने निमन्त्रणा पत्रको नमुना तयार गर्नुहोस् ।

(ख) युनाइटेड एकेडेमीको दोस्रो त्रैमासिक परीक्षामा प्रथम भएको साथीलाई दिइने बधाईपत्रको नमुना तयार गर्नुहोस् ।

१२ कुनै एक प्रश्नको उत्तर दिनुहोस् :

(४)

(क) आफ्नो कलेजले आयोजना गरेको शैक्षिक भ्रमण कार्यक्रमका सबै कुरा समेटि १५० शब्दसम्मको एउटा प्रतिवेदन तयार गर्नुहोस् ।

(ख) 'सञ्चार माध्यम र जनचेतना' शीर्षकमा १५० शब्द सम्मको वक्तृता तयार पार्नुहोस् ।

१३. न्यायपूर्ण समाजको निर्माण गर्न सकिने आधारहरू के के हुन सक्छन् ? प्रतिक्रिया लेख्नुहोस् ।

(४)

१४. कुनै दुई प्रश्नको उत्तर लेख्नुहोस् :

(४ + ४ = ८)

(क) दिइएको जीवनीको अंश पढी सोधिएको प्रश्नको उत्तर दिनुहोस् :

सन्ध्यासी जीवन सुरु गरेसँगै योगमायामा सामाजिक चेतना सलबलायो । उनले धार्मिक, सामाजिक, प्रशासनिक, आर्थिक तथा राजनीतिक क्षेत्रमा विद्यमान सबै खाले विकृतिहरूका बारेमा खुलेर विरोध गर्न थालिन् । उनी छुवाछुतलाई मानव सभ्यताको सबैभन्दा ठुलो कलङ्क ठानिन् । त्यसैले कुनै पनि सामाजिक कार्यमा मानिसहरूलाई छुत र अछुत तथा माथिल्लो जात र तल्लो जातमा छुट्ट्याउनु घोर अपराध मानिन् सनातनी परम्पराको नाममा जातका आधारमा फरक फरक कानून प्रचलनमा रहेको त्यस समयको समाजमा छुवाछुत र जातभात नमान्नु घोर आपत्तिको विषय हुन्थ्यो । त्यस्ता व्यक्तिहरू विभिन्न दण्डका भागी हुन्थे । त्यस्तो कठोर राणाकालीन समयमा पनि उनले छुवाछुत तथा वर्णाश्रमको खुलेर विरोध गरिन् । पूजा आराधना, भजन कीर्तन, प्रसाद वितरण र ग्रहणमा तिनीहरूलाई सहभागी गराएर उनले आफ्ना धारणालाई व्यवहारमा पनि उतारिन् । उनका आश्रममा प्रचलित यस किसिमको छुवाछुत रहित वातावरण देखेर कथित सनातनीहरू योगमायाको खुब आलोचना गर्थे ।

प्रश्नहरू

- (अ) योगमायाको धर्मसम्बन्धी मान्यता कस्तो थियो ?
(आ) योगमायाले गरेका सुधारका कार्यहरू के के हुन् ?

(ख) दिइएको नाट्यांश पढी सोधिएका प्रश्नहरूको छोटो उत्तर लेख्नुहोस् :

ठिक भन्नुभो बाबा । सन्तानको सुख र शिक्षाका लागि भन्दै म रातदिन खटिएँ तर मैले मेरो छोरालाई समय दिइनँ । ऊसँग बसेर उसको पढाइका बारेमा कुरा गरिनँ, उसका साथी को को छन् भनेर कहिल्यै सोधखोज गरिनँ, ऊ कहाँ गयो, के गयो, के खायो भनेर ख्याल गरिनँ । म त खालि मेरो व्यवसाय, बैठक भन्दै दौडधुप गरिरहेँ । उसले मागेजति दिइरहेँ तर ऊ त धेरै पहिलेदेखि दुर्व्यसनको सिकार भइसकेको रहेछ र आज मैले यो दिन भोग्नुपयो ।

प्रश्नहरू

- (अ) यस नाट्यांशमा अभिभावकले आफ्ना के-कस्ता कमजोरी रहेको स्विकारेका छन् ?
(आ) यस नाट्यांशमा व्यक्त समस्या कसरी समाधान गर्न सकिएला ?

(ग) दिइएको दैनिकीको अंश पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

बेलुका नै रिसोर्टमा बसेर आगो ताप्यै गर्दा देखिएको राराको रात्रिकालीन सौन्दर्य र स्थानीयबासीबाट सुन्न पाइएको देउडाको प्राकृतिक स्वाद पनि कम्ती स्वादिलो थिएन । रिसोर्टमा पुग्नासाथ हामीलाई तातो हर्बल चियाले स्वागत गरियो । जति पिए पनि थपिदिने चलन रहेछ । मुख र पेट हर्बलले ताते पनि शरीरसँग सिँगौरी खेल्न भन्दै चिसो हावा आफ्नै गतिमा बगिरहेको थियो । रारा भ्रमणमा आएका विदेशी मात्रै होइन स्वदेशी पर्यटक आआफ्नै समूह रिसोर्ट क्षेत्र (कम्पाउन्ड) भित्रै नाचगान र ख्यालठट्टा गर्दै रमाइरहेका दृश्य पनि कम्ती रोचक थिएनन् । चिसिएको शरीरलाई बलिरहेको आगाका रापमा सेकाउँदै आआफ्नै भाषा र संस्कृतिपरक प्रस्तुति दिइरहेका दृश्यले यस स्थानलाई सिङ्गो विश्वकै सांस्कृतिक केन्द्र बनाइरहेको थियो । यसको प्रत्यक्षदर्शी म आफैँ बनिरहेको थिएँ ।

प्रश्नहरू

- अ) राराको के के कुरा स्वादिलो र रोचक थिए ?
आ) रारालाई किन विश्वकै सांस्कृतिक केन्द्र भनिएको हो ?

१५ कुनै एक प्रश्नको उत्तर दिनुहोस् :

(८)

(क) 'वीर पुर्खा' कविताले नेपालीलाई राष्ट्रिय स्वाभिमानको महत्त्वपूर्ण पाठ कसरी पढाएको छ ? समीक्षात्मक उत्तर लेख्नुहोस् ।

(ख) नेपालको जलस्रोतले देशको समृद्धिको आधार कसरी तयार पार्छ ? विवेचना गर्नुहोस् ।

१६ दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्दसम्ममा नघटाई निबन्ध लेख्नुहोस् :

(८)

- (क) नेपाली युवाहरूमा राष्ट्रप्रेम
(ख) नेपालका हिमशृङ्खलाहरू
(ग) मोबाइल : सूचना र सञ्चारको लोकप्रिय साधन

सेन्ट अप परीक्षा - २०८०

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : ३०

समूह : ग

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्ने छ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. दिइएको अनुच्छेदका रेखाङ्कित वर्णहरूको उच्चारण स्थान र उच्चारण प्रयत्न छुट्याई लेख्नुहोस् : (३)

कृष्णलाल अधिकारी नेपाली साहित्यका प्रथम सहिद हुन् ।

२. शुद्ध गरी पुनर्लेखन गर्नुहोस् : (३)

गुरुले भन्नु भयो, नेपाल प्रकृतिक सम्पदाका दृष्टिले सन्सारकै धनी देस हो

३. अनुच्छेदमा रेखाङ्कन गरिएका शब्दको पदवर्ग पहिचान गरी लेख्नुहोस् : (२)

सरोज आकाशतर्फ फर्केर घण्टौं हेरिरहन सक्छ तर अरूहरू उसको यस्तो अनौठो बानीलाई कहाँ मन पराउँछन् र ।

४. दिइएका प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)

(क) दिइएको अनुच्छेदबाट दुई दुईओटा तद्भव र आगन्तुक शब्द पहिचान गरी लेख्नुहोस् :

हामी छाता ओढेर चार बजे पुलिस चौकी हुँदै किताब, मासु, रेडियो र माछा किन्न बजार जाँदा केही समय जुलुसको भिडले बाटो रोक्यो ।

(ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :

औजार, एकल, ओखल, ऐना

५. दिइएको अनुच्छेदबाट तीनओटा पारिभाषिक शब्द पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् : (३)

हामी जिपमा चढेर राजमार्ग हुँदै दाङ उपत्यका गयौं र होटलमा खाना खाएर बर्दिया राष्ट्रिय निकुञ्ज पुग्यौं । जलवायु परिवर्तनको सङ्क्रमणमा यहाँका जीवजनावर पनि परेका रहेछन् ।

अथवा

दिइएको अनुच्छेदबाट एउटा अनुकरणात्मक शब्द, एउटा उखान र एउटा टुक्का पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् :

गणेश आफ्नो व्यापार छोडेर धेरै पैसा कमाउँछु भनेर अष्ट्रेलिया गयो तर चोक्टा खान गएको बुढी भोलमा डुबेर मरी भने भैं काम नपाएर धुरुधुरु रूँदै स्वदेश फर्केर त्यसै बस्नु परेको छ । मानिसहरू विदेशमा रुखबाट पैसा टिप्न पाइन्छ र तालुमा आलु फल्छ भनेर विदेश सुइँकुच्चा ठोक्छन् तर हुनेहार दैव नटार भने भैं दुःखी जीवनले जहाँ पनि दुःख नै भोग्नुपर्छ । यस्तो खबर थाहा पाएपछि सबै जना आफ्नो काम सुरुसुरु गर्न थाले ।

६. कुनै दुई प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)

(क) दिइएको अनुच्छेदबाट दुईओटा उपसर्ग र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :

दैनिक रूपमा बढ्दै गएको सामाजिक सञ्जालको विकृतिले केटाकेटीहरू प्रभावित भएका छन् । आधुनिक युगको प्रविधिलाई अपमान गर्नु उचित होइन तापनि सही तरिकाले यसको प्रयोग गर्नुपर्छ ।

(ख) दिइएको अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह गर्नुहोस् र दुईओटा द्वित्व शब्द पहिचान गरी दोहोरिएको अंश छुट्याउनुहोस् :

पुरुषोत्तमले ऐँचोपैँचो तथा सरसापट गरेर नौतले घर बनाउँदा छरछिमेक र दाजुभाइले सरसहयोग गरेका थिए भने घरपैँचोमा उनले सयपत्री फूलको माला लगाएर गृह प्रवेश गरे ।

(ग) तलको अनुच्छेदबाट चारओटा सन्धियुक्त शब्द पहिचान गरी सन्धि विच्छेद गर्नुहोस् :

धीरेन्द्र अभिभावकको आज्ञानुसार सूर्योदय नहुँदै दैनिक रूपमा ज्ञानार्जन गर्न विद्यालयको पुस्तकालयमा जाने गर्थे ।

७. दिइएका प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)

(क) दिइएको अनुच्छेदलाई पुलिङ्ग भए स्त्रीलिङ्ग र स्त्रीलिङ्ग भए पुलिङ्गमा परिवर्तन गर्नुहोस् :

तिमी त ज्यादै राम्रा छौ । युवकले युवतीलाई भनेछ । युवकले राम्रो त ज्ञान र चेतना हो भने । त्यो कुरा युवतीले बुझिन् ।

(ख) दिइएको अनुच्छेदलाई तृतीय पुरुषमा परिवर्तन गर्नुहोस् :

हामीहरू नेपाली हौं । हामीहरू रारा गएका छैनौं । हामीले त्यहाँ जाने अवसर पाएका छैनौं । हामी रारा पुग्न पाए हर्षित हुन्छौं ।

८. दिइएका प्रश्नको उत्तर दिनुहोस् । (२ + २ = ४)

(क) तलको गद्यांशबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तार र विधेय विस्तार पद पहिचान गरी लेख्नुहोस् :

एकैछिनमा आउँछु भनी गएको केटो सात दिनसम्म आएन । हामीले बजारमा खाना खायौं । बाढीपीडितका लागि उनीहरूले राहात सङ्कलन गरे । त्यो राहात गाउँपालिकाका अध्यक्षले पीडितहरूलाई बाँडे ।

अथवा

दिइएको अनुच्छेदलाई सङ्गति मिलाई पुनर्लेखन गर्नुहोस् :

हामीले त्यो फेरि फर्कला कथा पढो । तिम्रो बहिनीले गृहकार्य गर्छ । साथीहरू खाजा खान गइन् । म कक्षामा बसेर पढ्न थाल्यो ।

(ख) दिइएको वाक्यलाई करण भए अकरण र अकरण भए करणमा परिवर्तन गर्नुहोस् :

उनीहरु कहिल्यै पुस्तक मेलामा जादैनन् । आफूलाई मन परेको पुस्तक किन्दैनन् । बजारमा सबै चिज खान्छन् । समयमा घर फर्किदैनन् ।

अथवा

दिइएका वाक्यहरुको कथन परिवर्तन गर्नुहोस् ।

छोरोले कलेजबाट फर्कदा के ल्याइदिनुहन्छ भने । उनलाई आज मैले नयाँ पुस्तक ल्याइदिने जानकारी दिएँ । छोरोले खुशी हुँदै भने, “बुबा धन्यवाद छ ।” मैले भने, “राम्रो पढेर परीक्षामा प्रथम हुनुपर्छ ।”

९. दुवै प्रश्नको उत्तर दिनुहोस् :

(४ + ४ = ८)

(क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर लेख्नुहोस् :

सामाजिक सद्भाव र मेलमिलाप कायम राख्नु र पीडितलाई न्याय दिनु दिगो शान्तिका अनिवार्य सर्त हुन् । नेपालमा दिगो शान्ति स्थापना कायम गर्ने महत्वपूर्ण संयन्त्र सत्य निरूपण तथा मेलमिलाप र बेपत्ता पारिएकाहरुको छानविन आयोग गठन गरिएको थियो । सरकार र माओवादी पक्षबिच सन् २००६ मा भएको बृहत् शान्ति सम्झौता र अन्तरिम संविधान २०६३ को एउटा अभिन्न पाटो पनि हो यो तर विभिन्न प्राविधिक तथा अन्य कारण देखाउँदै लामो समयसम्म आयोग गठन हुन सकेन । निकट भविष्यमा गठन हुने सम्भावना रहेको आयोग विभिन्न बहानामा फेरि नरोकिएला भन्न सकिन्छ । जुनसुकै बहानामा भए पनि आयोग गठनमा ढिलाई हुनु वा रोकिनु भनेको दिगो शान्ति प्रक्रियालाई प्रभावित गर्नु नै हो । सत्य निरूपण तथा मेलमिलाप आयोगले द्रन्द्धका क्रममा भएको सामान्य घटनामा बदला र प्रतिशोधको सट्टा मेलमिलाप र आपसी सद्भाव कायम गराउने ध्येय राखेको छ भने मानवताविरुद्धका जघन्य अपराधीलाई कारवाहीको प्रावधान राखेको छ । हुन त केही मानव अधिकारकर्मीले यसले मेलमेलमिलापको नाममा जघन्य अपराधीलाई समेत उन्मुक्ति दिन्छ भन्ने चिन्ता पनि व्यक्त गरेका छन् तर कानूनको अक्षरशः अध्ययन गर्ने र मर्म बुझ्ने हो भने यो मेलमिलापमुखी कानून हो तर माफीमुखी होइन भन्ने प्रष्ट बुझिन्छ । यो ऐनको मर्म अनुरूप काम गर्ने हो भने धेरैभन्दा धेरै पीडित र पीडकबिच मेलमिलाप गराउन सकिने, पीडितलाई न्याय तथा क्षतिपूर्ति दिन सकिने र मानवताविरुद्धका जघन्य अपराधीलाई उन्मुक्ति नदिइकन कारवाही गर्न सकिने अवस्था छ ।

प्रश्नहरू

(अ) शान्ति प्रक्रिया के कारणले प्रभावित हुन सक्छ ? (आ) मेलमिलाप आयोगले कस्तो उद्देश्य राखेको छ ?

(ई) यो ऐनको मर्म अनुरूप के गर्न सकिने छ ? (इ) दिगो शान्तिका सर्त केके हुन् ?

(ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

दिनभरको परिश्रमले प्राणीहरूको शरीर र दिमाग समेत थकाइन्छ, त्यसैले नयाँ स्फूर्ति तथा कामका लागि तयारी गर्नुपर्ने हुन्छ । त्यस्तो तयारी गर्दा मानिसलाई निद्रा लाग्दछ । त्यस्तै निद्राको बेला हामी प्रायः चेतनबाट अर्ध-चेतन हुने वा केही थाहा नपाउने वा अलि अलि थाहा पाउने हुँदा यस्तो थाहा पाउने वा केही थाहा नपाउने वा चेतनाको काम मात्र मस्तिष्कले गर्छ भन्ने कुरा जान्नु आवश्यक देखिन्छ । दिनभर काम गर्दा मस्तिष्कका कोषहरूमा लकटिक अम्लले भरिँदै जान्छ र यसरी तेजाव भरिँदा मस्तिष्कले थकाइको महसुस गर्दछ वा दिमाग गह्रौँ भएको अनुभव गर्दछ । यस्तो हुँदा हामी थकाइ तथा निद्रा लागेको महसुस गर्दछौँ । त्यही मस्तिष्कमा भरिने तेजावलाई शरीरले सफा पार्न चाँजो मिलाउन थाल्छ । यस्तो चाँजो मिलाउँदा निद्रा लाग्न थाल्छ र मान्छे निदाएपछि मस्तिष्कको एक एक भागबाट पालैपालो रगत हट्दै जान्छ । रगत हटेको भागमा जीवकोषहरूलाई ग्लुकोज जस्तो एक खाले पानी ग्लुकोजले धोएर त्यहाँ शरीरको लकटिक अम्ललाई हटाउने काम गर्दछ । यसै क्रमले मस्तिष्कका सबै भागबाट अम्ल हट्दै जान्छ वा सबै भाग एकपछि अर्को धोइँदै जान्छन् । अन्तिम अवस्थामा केही मिनेटका लागि मस्तिष्कका सबै भागबाट एकै पटक रगत हटाइन्छ र पुरै मस्तिष्क धोइँन्छ । यही मस्तिष्क धुने क्रिया हुँदा हामीलाई निद्रा लाग्छ । मस्तिष्कको एक एक भाग धुने कार्य हुँदा हामी निदाएको भए पनि केही भएमा हामी थाहा पाउँछौँ वा अलि अलि चेतन अवस्थामा हुन्छौँ । जब मस्तिष्क पुरै एकै पटक धोइँने अवस्थामा हुन्छ, त्यस बेला हामी केही पनि थाहा पाउँदैनौँ । प्रायः अचेत जस्तो हुन्छौँ । यसलाई निद्रा भनिन्छ र निद्रा लागेका बेला हुने क्रियालाई ‘ब्रेन वास’ भनिन्छ ।

प्रश्नहरू

(क) अम्ल शब्दको अर्थ के हो ?

(अ) तितो (आ) मिठो (इ) टर्रो (ई) अमिलो

(ख) मस्तिष्कले थकाइको महसुस किन गर्छ ?

(अ) निद्रा लागेर (आ) थकाइ लागेर (इ) मस्तिष्कमा तेजाव भरिएर (ई) अम्ल नभएर

(ग) हामीलाई निद्रा किन लाग्छ ?

(अ) ब्रेन वास नभएर (आ) मस्तिष्क धुने क्रिया हुँदा (इ) मस्तिष्क नधोएर (ई) मस्तिष्कमा ग्लुकोज भरिएर

(घ) ‘दिनभरको परिश्रमले प्राणीहरूको शरीर र दिमाग समेत थकाइन्छ’ भन्ने वाक्यमा ‘परिश्रम’ कस्तो शब्द हो ?

(अ) उपसर्ग व्युत्पन्न (आ) प्रत्यय व्युत्पन्न (इ) समस्त शब्द (ई) द्वित्व व्युत्पन्न

१०. दिइएको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश गर्नुहोस् :

(२ + २ = ४)

सेतो हिमालको सुन्दर दृश्यले नेपालीको त मन लोभ्याउँछ नै । अझ जापानी र युरोपेली त यस्तो दृश्य हेर्दा भुत्तुक्क हुन्छन् । नेपालका पाल्पाली, पूर्वेली, मनाडी सबैले अलग अलग हिमाल हेर्छन् । धेरै मानिसलाई अग्लो हिमाल हेरेर पूरा आनन्द लिने मन हुन्छ । नेपालमा एक दुई मात्र होइन, सयौं हिमाल छन् । हिमाललाई चम्किलो सूर्यले पहेँलो बनाउँछ । प्रशस्त हिउँ थुपने केही हिमालमा अचेल हिउँ नदेखा पहाडे र हिमाली मानिसमा चिन्ता बढेको छ । नेपाल समृद्ध हुन हिमाल, पहाड, तराई सबै क्षेत्र र क्षेत्रका जनता समृद्ध हुनु जरुरी छ । राष्ट्रका समस्याबाट मुक्त हुन हाम्रा जोजो मान्छे पीडित छन् ती ती मान्छेले मात्र होइन जोसुकैले चिन्ता लिनु आवश्यक छ । कस्तो देश बनाउने र कति छिटो वा ढिलो काम गर्ने भन्ने जिम्मेवारी नेपाल सरकारको हो । त्यसका लागि जुम्ली, मधेसी, हिमाली, पहाडे सबैको हित सोची नेपालका हिमालको रक्षा गर्नुपर्छ ।

११. कुनै एक प्रश्नको उत्तर दिनुहोस् :

(४)

(क) रामेछापको मन्थली नगरपालिकाले सर्वसाधारण जनतालाई वर्षा याममा भाडापखाला रोगबाट जोगिन जारी गर्ने सार्वजनिक सूचनाको नमुना तयार पार्नुहोस् ।

(ख) हिमालय बैंकको संस्थापक चित्तरञ्जन चिमोरियाको मोटरसाइकल दुर्घटनामा परी निधन हुँदा बैंकको तर्फबाट निकालिने श्रद्धाञ्जलीको नमुना बनाउनुहोस् ।

१२. कुनै एक प्रश्नको उत्तर दिनुहोस् :

(४)

(क) तपाईंको विद्यालयले आयोजना गरेको सांस्कृतिक कार्यक्रमको सबै कुरा समेटी १५० शब्दसम्मको प्रतिवेदन लेख्नुहोस् ।

(ख) 'राष्ट्र निर्माणमा नागरिकको भूमिका' विषयमा १५० शब्दसम्मको वक्तृता तयार पार्नुहोस् ।

१३. जातीय छुवाछूतलाई निर्मूल पार्न के गर्नु पर्ला ? १२५ शब्दसम्ममा आफ्नो प्रतिक्रिया लेख्नुहोस् :

(४)

१४. कुनै दुई प्रश्नको उत्तर लेख्नुहोस् :

(४ + ४ = ८)

(क) दिइएको संवादांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

जीवनको गाहोसारो पनि भावनासँग नै जोडिने कुरा हो नि । सामान्यतः मन परेको काममा कमाइ थोरै भए पनि चित्त बुभुन्छ । फेरि मैले जुन पद्धतिको खेतीपाती गरिरहेको छु त्यसबाट हाम्रो परिवार मजाले चलेको छ । हामी मल विउ औषधी बजारबाट किन्दैनौं । रासायनिक खेती भएको भए किसानको धेरै पैसा बजारतिर जान्थ्यो । यो त प्राकृतिक खेती हो त्यसैले हामी उत्पादन कार्यका लागि प्रायः केही किन्दैनौं, उपज भने खुरुखुरु बेच्छौं । उत्पादनमा लागत कम छ तर उत्पादित वस्तुको मूल्य चाहिँ धेरै पाइन्छ । स्वास्थ्यमैत्री हुनाले हाम्रो उत्पादन सजिलैसँग यहाँबाट बिक्रि, बजारको कुनै समस्या छैन ।

प्रश्नहरू

(अ) प्राकृतिक खेती गर्नाले के कस्तो फाइदा हुन्छ ?

(आ) 'मन परेको काममा थोरै कमाइ भए पनि चित्त बुभुन्छ भन्ने वाक्यको आशय के हो ?

(ख) दिइएको जीवनीको अंश पढी सोधिएका प्रश्नको छोटो उत्तर दिनुहोस् :

विहङ्गम दृष्टिले विचार गर्दा सम्पूर्ण पृथ्वी एउटा साफा घर हो, गृह हो । यहाँ जल, स्थल, वायु, आकाश र तेज (प्रकाश) यी पाँच तत्वका बिच जलचर, स्थलचर, नभचर र सबै चराचर आफ्नो जीवन बिताउँदछन् । पृथ्वीलाई छोडेर अन्य ग्रहमा जीवात्माको अस्तित्व भेटिएको छैन । त्यसैले हामी सबैले यहाँ बाँच्नुपर्छ, यहाँ मर्नुपर्छ । यो सिवाय अरू जाने ठाउँ छैन । पृथ्वीको पारिस्थितिक प्रणालीलाई बिथोल्दियौं भने हाम्रै अस्तित्व सडकटमा पर्छ । हालका दिनमा जलवायु परिवर्तनका विषयमा विशेष गरेर वायुमण्डल प्रदूषणका कारण पृथ्वीको सतह अप्रत्यासित ढङ्गले तात्ने क्रमलाई लिएर विशेष चिन्ता र चासो हाम्रो सामु तेर्सिएको छ ।

प्रश्नहरू

(अ) पृथ्वी नै सबैको साफा घर हो कसरी ?

(आ) वायुमण्डल प्रदूषणका कारण पृथ्वीको सतह अप्रत्यासित ढङ्गले तात्ने क्रमलाई लिएर किन चिन्ता बढेको छ ?

(ग) दिइएको रिपोर्ताजको अंश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

“उहाँले योग र ध्यानका सबै विधि सिकाउनुभयो र गर्न पनि लगाउनुभयो । आयुर्वेदिक औषधी पनि दिनुभयो ।” अमितले भने । “मनोचिकित्सकलाई पनि सोधियो, उहाँले त्यो पनि एउटा राम्रो पद्धति हो, आराम पनि हुन्छ भन्ने सल्लाह दिनुभयो । नभन्दै मन शान्त हुन थाल्यो । मैले योगको विषय पनि बोध गर्दै गएँ । यसमा यम, नियम, आसन, प्राणायाम, प्रत्याहार, धारणा, ध्यान हुँदै समाधिसम्मको यात्रा गरिन्छ भन्ने पनि बुझेँ । यस बोधले त मेरो मनमा विकार हट्दै गए र जीवनमा बाँच्ने इच्छाशक्ति जागृत भयो ।” सुन्दरले भने । “अनि त म भन्नु योग र ध्यान सिक्न थालें र प्रशिक्षक बनेँ । डाक्टर भा मेरा डाक्टर मात्रै नभएर गुरु पनि हुनुभयो ।”

प्रश्नहरू

(अ) सुन्दर छन्त्यालमा कसरी बाँच्ने इच्छाशक्ति जागृत भयो ?

(आ) योग साधनाले मानव स्वास्थ्यमा पार्ने प्रभावहरू केके हुन् ?

१५. कुनै एक प्रश्नको समीक्षात्मक उत्तर दिनुहोस् : (८)
- (क) आफ्नो घरमा बास बस्न आइपुगेको यात्रीका लागि सानीले गरेको दीर्घ प्रतीक्षा तपाईंलाई कस्तो लाग्यो ?
 (ख) दिगो कृषि पद्धतिको लागि के कस्ता कुरामा ध्यान दिनुपर्छ ?
१६. दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्द नघटाई निबन्ध लेख्नुहोस् : (८)
- (क) मलाई मनपर्ने पुस्तक (ख) पुस्तकालयको महत्त्व (ग) विज्ञान र प्रविधि

सेन्ट अप परीक्षा - २०८०

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : ३०

समूह: घ

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्ने छ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. दिइएको अनुच्छेदका रेखाङ्कित वर्णहरूको उच्चारण प्रयत्न र प्राणत्व छुट्याई लेख्नुहोस् : (३)
- ऊ सहर बजारतिर लाग्यो रे ।
२. शुद्ध गरी पुनर्लेखन गर्नुहोस् : (३)
- हामिले रारा राष्ट्रीय निकुञ्जको कार्यालको दछिन फर्केको गेटनजिकै बसेर पनि रारालाई हेर्नथ्यौ ।
३. अनुच्छेदमा रेखाङ्कन गरिएका शब्दको पदवर्ग पहिचान गरी लेख्नुहोस् : (२)
- ओहो ! तपाईंले त मिठो कविता सुनाउनुभयो भनेर उहाँले मलाई भन्नुभयो ।
४. दिइएका प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)
- (क) दिइएको अनुच्छेदबाट दुई दुईओटा तत्सम र आगन्तुक शब्द पहिचान गरी लेख्नुहोस् :
 नवीनले कोठामा बसेर ईश्वरको गुणगान गाइएको पुस्तक पढ्दै थियो भने शङ्कर रोदीघरको बुइंगलमा डम्फु बजाउँदै कलेजमा सिकेको तामाङ सेलो भाकाको गीत गाइरहेको थियो ।
- (ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :
 खरायो, त्रिशूल, क्षमादान, गमला
५. दिइएको अनुच्छेदबाट तीनओटा पारिभाषिक शब्द पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् : (३)
- हामीले हिमालको भ्रमण गरी रिसोर्टमा बसेर पर्वत र वनस्पतिको बारेमा कविता लेख्दा रमाइलो अनुभूति गर्थ्यौं । हिमाच्छादित कटिबन्धको मनमोहक छटालाई कवितामा लिपिबद्ध गर्दाका अनुभूति अवर्णनीय थियो ।
- अथवा
- दिइएको अनुच्छेदबाट एउटा अनुकरणात्मक शब्द, एउटा उखान र एउटा टुक्का पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् :
- धनको मुख रातो हुन्छ भने भैं अंश बन्डाको निहुँमा दाजुभाइ विचमा भगडा हुँदा आमा डरले थुरथुर काम्नुभयो भने बुबाको टाउको खायो । आफू ताक्छ मुडो बन्चरो ताक्छ घुँडो भने भैं छोराहरूको भगडा मिलाउन लाग्दा भाइले दाइको गालामा चड्याम्म हानेर कुलेलम ठोक्दा बुबालाई भोक चल्थो ।
६. कुनै दुई प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)
- (क) दिइएको अनुच्छेदबाट दुईओटा उपसर्ग र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :
 सिमाना सुरक्षामा खटिएका नेपाली सेनाले अनुशासन र मर्यादित रूपमा देशको रक्षा गरिरहेका बेलामा अचानक दशमनहरूले आक्रमण गर्दा आधुनिक हतियारले उनीहरूलाई प्रहार गरी नेपाली सेनाले विजय प्राप्त गरे ।
- (ख) दिइएको अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह गर्नुहोस् र दुईओटा द्वित्व शब्द पहिचान गरी दोहोरिएको अंश छुट्याउनुहोस् :
 भ्रमभ्रम पानी परिरहेको बेलामा सान्नानी घरसरको काम सकेर चौबन्दी चोलो र गरगहना लगाई मिनाक्षी यातायातमा चढेर बजार गइन् र बजारबाट फर्कदा रातोरातो रङ्को सारी र भुइँकटहर किनेर घर फर्किन् ।
- (ग) तलको अनुच्छेदबाट चारओटा सन्धियुक्त शब्द पहिचान गरी सन्धि विच्छेद गर्नुहोस् :
 नरेशले सदैव सूर्यास्तपछि देवर्षिको वृद्धाश्रममा गएर चन्द्रोदय नहुँदासम्म वृद्धहरूलाई भजन सुनाउँछन् ।
७. दिइएका प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)
- (क) दिइएको अनुच्छेदका वाक्यहरूलाई उच्चआदरमा परिवर्तन गर्नुहोस् :

तिमी क्रिकेट खेल गयो । क्रिकेट खेलमा प्रगति गर्नु । खेल जितेर राष्ट्रको इज्जत बढायौ । तिमी हाम्रो राष्ट्रको गहना हो ।

(ख) दिइएको अनुच्छेदलाई प्रथम पुरुषमा परिवर्तन गर्नुहोस् :

ऊ निकै राम्रो नाटक लेख्छ । ऊ आफूले लेखेका नाटकहरू दर्शकसामु मञ्चन गराउँछ । भविष्यमा ऊ सफल नाटककार बन्छ । साहित्यका माध्यमबाट समाज परिवर्तन गराउँछ ।

८. दिइएका प्रश्नको उत्तर दिनुहोस् :

(२ + २ = ४)

(क) तलको गद्यांशबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तार र विधेय विस्तार पद पहिचान गरी लेख्नुहोस् :

सधैं भविष्यप्रति चिन्तित हुने मेरो छोरो पढाइमा ध्यान दिन्छ । ऊ अहिले पाइलट पढ्दै छ । । आकाशमा हवाईजहाज उडाउनु उसको लक्ष्य हो । समस्यामा परेकाहरूलाई उसले सहयोग गर्छ ।

अथवा

दिइएको अनुच्छेदलाई सङ्गति मिलाई पुनर्लेखन गर्नुहोस् :

मेरो बहिनीले उपन्यास पढ्दै थियो । त्यति बेला बाहिर स्याल आउनुभएछ । स्यालले कुखुरा लगिछे । आमाले उसलाई गाली गरिछे ।

(ख) दिइएको वाक्यलाई करण भए अकरण र अकरण भए करणमा परिवर्तन गर्नुहोस् :

यो बाटोमा म एकलै हिँड्छु । यहाँ सधैं तर्साउँछु । छिटो नहिँडे मन्थली पुगिँदैन । बास पनि राम्रो नपाइएला ।

अथवा

दिइएका वाक्यहरूको कथन परिवर्तन गर्नुहोस् :

गुरुले भन्नुभयो, “तिम्रो पढाइ त राम्रो छ ।” गुरुले सबैको परीक्षा राम्रो होस् भन्ने कामना गर्नुभयो । गुरुले भन्नुभयो, “सधैं बिहान सबेरै उठेर पढ्नुपर्छ ।” गुरुले उनीहरू मिहिनेती भएको कुरा जानकारी दिनुभयो ।

९. दुवै प्रश्नको उत्तर दिनुहोस् :

(४ + ४ = ८)

(क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर लेख्नुहोस् :

नेपालमा वातावरण संरक्षणको चर्चा गर्दा ग्रामीण र सहरी वातावरणलाई छुट्याएर हेर्नुपर्ने हुन्छ । ग्रामीण क्षेत्रको वातावरणको अवस्था, जनसङ्ख्या वितरण, जनजीवनको आयस्रोत, कारक तत्व र यसका दूरगामी परिणामहरूले ग्रामीण जनजीवनमा असर पार्न सक्दछन् । वातावरणीय विनाशका कारण कृषि उत्पादनमा आएको ह्रास सोचनीय भइसकेको छ । ग्रामीण क्षेत्रका वातावरणीय समस्या गरिवीसँग बढी गाँसिएका छन् । गरिवी र स्रोत उपयोग प्रक्रियासँग यी समस्याहरू विभिन्न क्षेत्रमा भिन्न प्रकृतिका छन् र नेपालको भौगोलिक विकटता विचार गर्दा यो स्वाभाविक पनि हो, तर सहरी क्षेत्रको वातावरणीय समस्या जनताको जीवनस्तर उकास्ने कार्यसँग स्पष्टतः सम्बन्धित छ । सहरमा जनसङ्ख्या चाप, वितरण प्रणाली, तिनले प्रयोग गर्ने स्रोत, फाल्ने फोहोरको प्रकृति र यसबाट आर्जित स्वास्थ्य समस्या र पर्यटन व्यवसायमा परेको वा पर्न सक्ने दूरगामी प्रभावहरू चासोको विषय बन्न पुगेका छन् । क्षेत्रगत विकासको अवधारणाबाट समाधान त्यति सजिलो पनि छैन ।

प्रश्नहरू

- ग्रामीण जनजीवनमा के के ले असर पार्न सक्दछ ?
- नेपालको भौगोलिक विकटता विचार गर्दा के स्वाभाविक छ ?
- सहरी क्षेत्रको वातावरण केसँग सम्बन्धित छ ?
- सहरमा के कस्ता प्रभावहरू चासोको विषय बन्न पुगेका छन् ?

(ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

कर्खा गन्धर्वहरूको आफ्नै ढङ्गको वर्णनात्मक गीत हो । सवाईका जस्ता मिलेका चरणहरू यसमा हुँदैनन् । वर्णका क्रममा ठाउँठाउँमा अनुप्रास र तुक मिलाएको देखिए तापनि कुशल गायनको स्वरको आरोह-अवरोहबाटै कर्खामा लयात्मकता थपिन्छ । कर्खा गाउँदा गायक एकै भएमा उसैले पूरा गर्छ तर उसका साथमा अर्को कोही भएमा उसले पनि साथ दिन सक्छ । स्रोताको रुचिअनुसार विभिन्न अरू गीत पनि गाइनेहरू गाउँछन् । खास गरी पृथ्वीनारायण शाह, कीर्तिशाह, अमरसिंह, बलभद्र र भक्ति थापाका साथै जङ्गबहादुर, चन्द्रशमशेर र जुद्धशमशेरसँग सम्बद्ध कर्खाहरू भेटिएका छन् । उनीहरू गोरखानाथ, मनकामना र अन्य स्थानीय देवदेवीका स्तुतिपरक गीतहरू पनि कर्खा शैलीमा नै गाउँछन् । ऐतिहासिक वीरका साथै स्थानीय व्यक्तिहरूसँग सम्बद्ध कर्खाहरू पनि उनीहरू गाउने गर्छन् । कर्खाकै शैलीमा डाँफे र लाहुरेका गाथाहरूको पनि गायन हुन्छ । तर प्रायः सबैजसो गाइनेले कर्खा गाउने गरे तापनि परम्परागत कर्खाहरू

पूर्ण रूपमा गाउनेहरू कमै छन् । कर्खा गाउन सिपालु कतिपय गन्धर्वहरू यो संसारमा नरहेकाले ती कर्खाहरू सुन्न पाइन् ।

प्रश्नहरू

(क) 'कर्खा' शब्दको अर्थ के हो ?

(अ) सारङ्गी (आ) मादल (इ) भैलो (ई) गीत

(ख) कर्खाको शैलीमा कसका गाथाहरु गाइन्छन् ?

(अ) डाँफे र मुरलीको (आ) लाहुरे र बलभद्रको (इ) डाँफे र लाहुरेको (ई) लाहुरे र गोरखनाथको

(ग) गन्धर्वहरू स्थानीय देवदेवीका स्तुतिपरक गीतहरू कुन शैलीमा गाउँछन् ?

(अ) गीति शैलीमा (आ) कर्खा शैलीमा (इ) रमाइलो शैलीमा (ई) लोक शैलीमा

(घ) ऐतिहासिक वीरका साथै स्थानीय व्यक्तिहरूसँग सम्बद्ध कर्खाहरू पनि उनीहरू गाउने गर्छन् भन्ने वाक्यमा 'ऐतिहासिक' शब्द कुन प्रक्रियाबाट बनेको हो?

(अ) प्रत्यय (आ) उपसर्ग (इ) समास (ई) द्वित्व

१०. दिइएको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश गर्नुहोस् : (२ + २ = ४)

देशको विकासमा युवाशक्तिको महत्त्वपूर्ण भूमिका रहन्छ । युवाहरू देशका कर्णधार हुन् । युवाहरूलाई शिक्षादीक्षा प्रदान गरी सबल तुल्याएर उनीहरूलाई राष्ट्रनिर्माणको जिम्मेवारी सुम्पनु आवश्यक छ । देशमा रहेको युवाशक्ति सबल नेतृत्व र दिशानिर्देशको अभावमा त्यसै खेर गइरहेकाले स्पष्ट नीति र दिशा निर्देशको आवश्यकता महसुस भएको छ । वर्तमान समयमा देखा परेको विकृतिले युवाशक्तिलाई अत्यन्त प्रभाव पारेको छ र उनीहरू अन्धो बनेर विकृतिकै दलदलमा फसिरहेका छन् । मादक पदार्थ सेवन, मद्यपान, धूम्रपानजस्ता कुलत तथा दुर्व्यसनमा फसेर युवाशक्तिले आफ्नो समयलाई त्यसै बर्बाद पारिराखेको तथ्य हाम्रा सामु प्रस्टै छ । यसप्रकार कुलतमा फसेर कुबाटोमा हिँडेका युवावर्गलाई सही मार्गमा ल्याउनु हामी सबैको जिम्मेवारी पनि हो । यसका लागि स्पष्ट नीति बनाएर युवाहरूलाई राष्ट्रनिर्माणको मूलधारमा ल्याउनु आवश्यक छ ।

११. कुनै एक प्रश्नको उत्तर दिनुहोस् : (४)

(क) अरनिको यातायातले निकालेको विद्युतीय सुपर एक्सप्रेस बसको प्रचारप्रसारका लागि गरिने विज्ञापनको नमुना तयार पार्नुहोस् ।

(ख) आफ्नो छोराको विवाहको अवसरमा आफन्तजनलाई आमन्त्रण गर्न बुबा आमाको तर्फबाट दिइने निमन्त्रणा पत्रको नमुना बनाउनु होस् ।

१२. कुनै एक प्रश्नको उत्तर दिनुहोस् : (४)

(क) 'बद्धो हवाइजहाज दुर्घटना' शीर्षकमा १५० शब्दसम्मको टिप्पणी तयार पार्नुहोस् ।

(ख) आफूले भ्रमण गरेको कुनै धार्मिक तीर्थस्थलको वर्णन गर्दै एक दिनको दैनिकी लेख्नुहोस् ।

१३. नारीमाथि हुने हिंसालाई कसरी निर्मूल पार्न सकिनेला ? १२५ शब्दसम्ममा आफ्नो प्रतिक्रिया लेख्नुहोस् । (४)

१४. कुनै दुई प्रश्नको उत्तर लेख्नुहोस् : (४ + ४ = ८)

(क) तलको निबन्धांश पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

समाजमा श्रम विभाजनले मान्छेलाई भिन्न भिन्न काम गर्ने बनायो । हामीले त्यही आधारमा जात बनायौं । त्यसकै आधारमा विभेदको परम्परा सुरु भयो । कोही दलित भयौं, कोही ब्राह्मण, कोही जनजाति । हाम्रा आफ्ना संस्कार छन्, हाम्रा आफ्ना परम्परा छन्, हाम्रा आफ्ना खानपान छन्, हाम्रा आफ्ना वेशभूषा छन् । हाम्रो रङ्ग भिन्न छ, कोही काला हौंला, कोही गहुँगोरो । हाम्रो अनुहार भिन्न होला । कसैको नाकको उचाइ फरक होला, कसैको आँखाको आकार र स्वरूप भिन्न होला । म फेरि घोरिन्छु, अत्तलिन्छु र सोच्छु, यही आधारमा मानिसमा भेद किन ? मनुष्यको मनुष्यत्व र मानवको मानवता नै सबैभन्दा ठुलो कुरा हो । धर्म पनि यही हो, कर्तव्य पनि यही हो । समाजले सामाजिक, सांस्कृतिक विषयलाई भेदको विषय बनायो । हामी छुट्टियौं, हामी टुक्रियौं, हामी भिन्न भयौं र हामी मनुष्यले नै यी भेद जन्मायौं । यो भिन्नता मान्छेले जन्माएको भिन्नता हो नत्र मानिस एकै हो, हामी सबै प्रकृतिका साभा सन्तान हौं, साभा वरदान हौं ।

प्रश्नहरू

(अ) जातीय विभेद कसरी जन्मिएको हो ?

(आ) मानिसको धर्म र कर्तव्य के हो ?

(ख) दिइएको वक्तृतांश अंश पढी सोधिएका प्रश्नको छोटो उत्तर दिनुहोस् :

आज हामी आफैँसँगको बिना नचिनेर भौँतारिरहेको कस्तुरी भैं भएका छौं । जलस्रोतमा धनी राष्ट्र भए पनि दिगो पूर्वाधार विकासका योजनाका अभावले गर्दा हामी स्रोत र साधन भए पनि अँध्यारामा बस्न बाध्य छौं । उर्वराभूमि भएर पनि सिँचाइका आधुनिक प्रविधि अपनाउन नसक्दा जग्गा बाँझैँ छन्, जनता भोकभोकै छन् । युवाशक्ति विदेसिन बाध्य

छन् । विकास निर्माणले विश्वलाई चकित पार्ने छिमेकीलाई टुलुटुलु हेरेर गाँस, बासकै समस्यामा पिरोलिन बाध्य छ हाम्रो समाज । यो अवस्थालाई बदलेर विश्व प्रतिस्पर्धामा होमिन सक्न बनाउने क्षमता जलस्रोतमा मात्र छ । हामी अमृत समान हिमालको कञ्चन पानी बोतलमा बेचेर विश्वका मानिसको तिर्खा मेटाउन सक्छौं । कर्नालीमा जलविहार, कोसी र तामाकोसीमा सिँचाइका उचित व्यवस्थापन गरेर धर्ती उर्वरा बनाउन सक्छौं ।

प्रश्नहरू

(अ) जलस्रोत र उर्जाको क्षेत्रमा कसरी दिगो विकास गर्न सकिन्छ ?

(आ) राष्ट्रको अर्थतन्त्र निर्माणमा सिँचाइको कस्तो भूमिका हुन्छ ?

(ग) दिइएको कवितांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

डिगर्चामा डोव तिम्रो चिसो हिउँभित्र होला

वेत्रावती किनारभरि पौरखको चिनो होला

वीर पुर्खा ! तिम्रीलाई मितेरीले मात्र बाँध्यो

सागर तरी संसारभरि वीर गोर्खा रगत बग्यो ।

प्रश्नहरू

(अ) माथिको कवितांशमा हाम्रा पुर्खाहरूका बारेमा के भनिएको छ ?

(आ) हामीले हाम्रा पुर्खाको गौरव कसरी जोगाउन सक्छौं ?

१५. कुनै एक प्रश्नको समीक्षात्मक उत्तर दिनुहोस् ।

(८)

(क) 'लौ आयो ताजा खबर' लघुनाटकको मुख्य सन्देश के हो ?

(ख) नेपालको पर्यापर्यटनको विकासमा स्थानीय समुदाय तथा सरकारको भूमिका उल्लेख गर्नुहोस् ।

१६. दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्दसम्म नघटाई निबन्ध लेख्नुहोस् :

(८)

(क) मेरो जीवनको लक्ष्य

(ख) विकास र शान्ति

(ग) नेपालका प्राकृतिक सम्पदा

सेन्ट अप परीक्षा - २०८१

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : ३०

समूह: क

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्ने छ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. तलको अनुच्छेदका रेखाङ्कित वर्णहरूको उच्चारण प्रयत्न र घोषत्व छुट्टयाएर लेख्नुहोस् :

(३)

सूचना भन्नाले कुनै विषयका बारेमा दिइने जानकारी हो ।

२. शुद्ध गरी पुनर्लेखन गर्नुहोस् : (३)
हाकीमले सोधे, तपाईंको कथाको शीर्षक के राख्ने अमित जी ? यककासि मेरो मूखबाट निस्क्यो, सफलताको कथा ।
३. रेखाङ्कित शब्दहरूको पदवर्ग पहिचान गरी लेख्नुहोस् : (२)
स्यावास ! कान्छी छोरी तिमिले उन्नति गरेर प्रगति गर्दै हाम्रो इज्जत बढाएकोमा कान्छीलाई धेरै धेरै धन्यवाद छ ।
४. दिइएका प्रश्नहरूको उत्तर दिनुहोस् : (२+२ = ४)
क) दिइएको अनुच्छेदबाट दुईओटा तत्सम र दुईओटा आगन्तुक शब्द पहिचान गरी लेख्नुहोस् :
विवेकले डाक्टरसित आफ्नो रोगको डायग्नोसिस राम्ररी नगराएकोले विशालले चित्त दुखायो । वैद्यको औषधीले उसको क्यान्सर निको भयो ।
ख) तलका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :
मल जल, ईश्वर, इख
५. तल दिइएको अनुच्छेदबाट तीनओटा परिभाषिक शब्द पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् : (३)
अनुसन्धान गर्दै जाँदा सङ्क्रामक रोग कुपोषणबाट धेरै बालबालिकाहरू ग्रसित भएको जानकारी स्वास्थ्य मन्त्रालयको अभिलेखबाट जानकारी पाइयो ।

अथवा

दिइएको अनुच्छेदबाट एउटा उखान, एउटा टुक्का र एउटा अनुकरणात्मक शब्द पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् :
'बाघको छालामा स्यालको रजाइ' भने भैं मैले लेखेको कविता कुमारले आफ्नो नाममा छपाएर लोकाप्रिय बन्दा म तीन छक पर्नु स्वभाविक भए तापनि मलाई भनक्क रिस उठेन । 'अड्को पड्को तेलको धुप' भने भैं चिनीको सट्टामा मैले साथीलाई सखर हालेर चिया दिँदा उनले मलाई 'कागको फूल चोर्नु' हुँदोरहेछ भन्दा म छक्क परें ।

६. कुनै दुई प्रश्नको उत्तर दिनुहोस् : (२+२ = ४)
क) तलको अनुच्छेदबाट दुई दुईओटा उपसर्ग र प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :
हिमाली सुन्दरता नेपालको प्राकृतिक वरदान भए तापनि पर्यटकलाई प्रभाव पार्न अव्यवस्थित फोहोरको व्यवस्था गर्नु आवश्यक छ ।
ख) दिइएको अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह गर्नुहोस् र दुईओटा द्वित्व शब्द खोजी दोहोरिएको अंश लेख्नुहोस् :
नवरात्रिमा नवदुर्गाको पूजाका निमित्त रातारात पूजास्थल निर्माण गर्नुपरेको हुँदा सबै आ-आफ्नो काममा खुरुखुरु लागेका थिए । भोक्रनिद्रा र थकाइसकाइ सबै विर्सिएर भए पनि समयसीमाभित्रै पूजास्थल निर्माण गरी नवदुर्गा भवानी र लम्बोदर गजाननको मूर्तिसमेत स्थापना गरे ।
ग) तलको अनुच्छेदबाट चारओटा सन्धियुक्त शब्द पहिचान गरी तिनको सन्धि विच्छेद गर्नुहोस् :
प्रत्येक दिन पुस्तकालयमा गएर पढ्ने रमेश गएको हप्ता सूर्योदय भएदेखि सूर्यास्त नहुन्जेलसम्म जगन्नाथलाई लिएर फुटबल हेर्न रङ्गशाला गएछ ।
७. दुवै प्रश्नको उत्तर दिनुहोस् : (२+२ = ४)
क) तल दिइएको अनुच्छेदलाई पुलिङ्ग भए स्त्रीलिङ्गमा र स्त्रीलिङ्गमा भए पुलिङ्गमा परिवर्तन गर्नुहोस् :
मेरो छोरो क्याम्पस गयो । बहिनीलाई पनि साथैमा लग्यो । बहिनी सरासर कक्षामा पसी । छोरो चाहिँ साथीसँग कुरा गर्न थाल्यो ।
ख) दिइएको अनुच्छेदलाई एक वचन भए बहुवचन र बहुवचन भए एक वचनमा परिवर्तन गर्नुहोस् :
उनीहरू गएको हप्ता जुम्ला घुम्न गए । म चाहिँ घरमा नै बसेँ । मैले घरमा बसेर उपन्यास पढें । उनीहरूले जुम्लाको स्याउ खाए ।

८. तलका दुवै प्रश्नको उत्तर दिनुहोस् : (२+२ = ४)
क) तलका वाक्यहरूबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तारक र विधेय विस्तारक पहिचान गरी लेख्नुहोस् :
अ) प्रतिभाशाली लेखकहरू पनि आवश्यकताभन्दा बढी भावुक हुन्छन् ।
आ) जीवन र जगत्का बारेमा बुझेकाहरूले अरूलाई राम्ररी बुझाए हुन्थ्यो ।
इ) सधैं भविष्यप्रति चिन्तित मेरी छोरी पढाइमा लगनशील छे ।
ई) असाध्यै मिल्ने मेरो साथी विशेष कामका लागि विदेशतिर लाग्दै छ ।

अथवा

दिइएको अनुच्छेदलाई सङ्गति मिलाई पुनर्लेखन गर्नुहोस् :

उनीहरू हिजो विदेशबाट आयो । आमाले उनीहरूका लागि खाना पकाएर राखेको छ । आमासँग मेरो बहिनी पनि बस्छ । आमा मलाई असाध्यै माया गर्छ ।

ख) दिइएको वाक्यलाई करण भए अकरण र अकरण भए करणमा परिवर्तन गर्नुहोस् :

यो गाउँ जाने बाटो हो । बाटोमा तपाईं र म सँगै हिउँ । तपाईंले मेरो कुरा मान्नु भएन । साँझ पर्दा हामी गाउँमा पुग्दैनौं कि ?

अथवा

दिइएका वाक्यहरूलाई प्रत्यक्ष भए अप्रत्यक्ष र अप्रत्यक्ष र भए प्रत्यक्ष कथनमा परिवर्तन गर्नुहोस् ।

अ) उनलाई मैले आज नआउने जानकारी दिएँ ।

आ) सञ्जयले भने, “लोभ गर्नु, अरूलाई पीडा दिनु र श्रमशोषण गर्नु महापाप हो ।”

इ) केटाकेटीले विदेशबाट फर्कँदा के ल्याइदिनुहुन्छ भनी प्रश्न गरे ।

ई) आमाले भन्नुभयो, “समयमै पढाइलाई महत्व देऊ नत्र भविष्य अन्धकारमय छ ।”

९. **दुवै प्रश्नहरूको उत्तर दिनुहोस् :**

(४+४ = ८)

क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नहरूको उत्तर दिनुहोस् :

मिथिला लोककला अत्यन्त प्राचीन र लोकप्रिय कला हो । यस कलामा मिथिला लोकमानस अनेक माध्यमहरूबाट अभिव्यक्त हुँदै आएको छ । यसको सुरुवात, संवर्द्धन र संरक्षणमा महिलाहरूको योगदान उल्लेखनीय छ । सामान्यत विभिन्न माङ्गलिक अवसर पारेर घरको भित्तामा, चोक आँगनमा, भाँडाहरूमा तथा लुगाकपडामा समेत यस्ता कलाकृतिको निर्माण गर्ने गरिन्छ । मैथिल लोककलालाई भित्ताचित्र, भूमिचित्र, पटचित्र, काष्ठचित्र, वास्तुचित्र भाण्डचित्र र व्यक्तिचित्र गरेर अध्ययन गरिएको पाइन्छ । मैथिल कलाकृतिमा सङ्कटबाट सुरक्षा र भविष्यका लागि कल्याणको कामना तथा स्वास्थ्य र समृद्धिको शुभकामना अभिव्यक्त भएको हुन्छ । मैथिल लोककलामा अल्पना निकै प्रसिद्ध छ । यो मैथिली महिलाहरूद्वारा विभिन्न माङ्गलिक अवसरमा आ-आफ्ना घरआँगन, ढोकाचोक आदिमा चित्रित विभिन्न आकारप्रकारको रेखाचित्र हो । अल्पनालाई घरमा आउँदा र निस्कँदाको शुभसाइतको द्योतक मानिएको छ । यो पानीमिश्रित चामलको पिठोबाट षट्कोण, अष्टकोण र स्वस्तिक जस्ता विभिन्न आकारमा पनि बनाइन्छ ।

प्रश्नहरू

(अ) अल्पना किन निर्माण गरिन्छ ?

(आ) मिथिला लोककलामा महिलाको कस्तो भूमिका छ ?

(इ) मिथिला लोककलालाई के कसरी वर्गीकरण गरिएको छ ?

(ई) माङ्गलिक र द्योतक शब्दको अर्थ लेख्नुहोस् ।

ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

निश्चय नै मानवीय सभ्यताको उदय र विश्वव्यापी प्रसारभन्दा अघि घटित भएका विनाशालीलाहरू प्रकृतिद्वारा गरिएका हुन् । मानव जातिले विनाशकारी विपत्तिका घटनाले खडा गरेको सन्त्रासको प्रतिरोध गर्दै क्रमशः ती विनाशकारी विपत्तिपूर्ण घटनाहरूमाथि विजय प्राप्त गर्दै आयो । यस्ता सन्त्रासप्रतिको मानवीय प्रतिरोधको फलस्वरूप इन्जिनियरिङ्ग परियोजनाहरू, विनाशकारी घटना प्रतिरोधी कार्यक्रम र मौसम विज्ञान विकसित भए । स्वास्थ्य विज्ञान र चिकित्साशास्त्रको विकास केही हदसम्म प्लेग भनिने सङ्क्रामक रोगको सामना गर्ने अति जरूरी आवश्यकताको फलस्वरूप भएको हो जसले एक ताक विश्वलाई नै विध्वंस गरेको थियो । वास्तवमा अधिकांश आधुनिक विज्ञान विनाशकारी विपत्तिका घटनाहरूसँगको लडाईँबाट विकसित भएका छन् ।

तर आज प्राकृतिक नभई मानवकृत विनाशकारी विपत्तहरूले नै मानव जातिको अस्तित्वलाई पूर्णतः रोकिदिने सन्त्रास र खतराको अनुभव गराइरहेका छन् । विज्ञानको तीव्र प्रयोगमार्फत् मानिसले विनाशकारी विपत्तहरूबाट बच्ने क्रममा प्रकृतिको भन्दा धेरै ठुलो शक्ति विकसित गरेको छ ।

प्रश्नहरू

क) प्रतिरोध शब्दको अर्थ कुन हो ?

अ) प्रतिफल प्राप्त हुनु

आ) बल प्रयोगलाई रोक्ने काम

इ) प्रगति गर्दै जाने मानिस

ई) प्रतिगमन

ख) आधुनिक विज्ञानको विकास कसरी भएको हो ?

अ) विपत्तिका घटनाहरूसित जुध्दै अगाडि बढ्ने क्रममा

आ) विनाशकारी घटनाको प्रतिफलका रूपमा

इ) इन्जिनियरिङ्ग परियोजनाहरूको विकासको क्रममा

ई) मौसम विज्ञानको विकासको रूपमा

ग) आदिम कालमा भएका विनाशालीलाको कारक कसलाई मान्न सकिन्छ ?

अ) मानव जातिलाई

आ) विश्वव्यापी प्रसारलाई

इ) सभ्यताको विकासलाई

ई) प्रकृतिलाई

घ) निश्चय नै मानवीय सभ्यताको उदय र विश्वव्यापी प्रसारभन्दा अधि घटित भएका विनाशहरू प्रकृतिद्वारा गराइएका हुन् भन्ने वाक्यमा 'सभ्यताको' कस्तो शब्द हो ?

अ) निपात आ) संयोजक इ) नाम ई) विशेषण

१०. दिइएको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश लेख्नुहोस् : (४)

शरीरमा लाग्ने रोगहरू कुनैलाई पनि सानो सम्झनु हुँदैन । सानो सम्झँदा बल्केर त्यही रोग ठुलो हुन्छ । हिजोआज ठुला प्रकृतिका रोगहरू त सामान्य बनिसकेका छन् । यसको उदाहरणमा रक्तचाप र मधुमेहलाई लिन सक्छौं । रक्तचापबाट ग्रसित व्यक्तिहरूको सङ्ख्या ठुलो छ । यसपछि मधुमेहका रोगीहरूको सङ्ख्या बढ्दो छ । यस रोगलाई मन्दविषका रूपमा लिइन्छ । मधुमेहले शरीरका अन्य भागहरूका साथै आँखाको दृष्टिपर्दा (रेटिना) का रक्तनसाहरूमा असर पुऱ्याई दृष्टि कमजोर पार्नुका साथै व्यक्तिलाई अन्धोसमेत बनाउँछ । यसलाई डाइबेटिक र रेटिनोपेथी भनिन्छ । रेटिना आँखाको भित्री भागमा रहेको दृष्टिका लागि अत्यन्तै महत्त्वपूर्ण स्नायुतन्तुले बनेको पारदर्शी झिल्ली हो, जसलाई नाङ्गो आँखाले देख्न सकिँदैन । मधुमेहको असरले गर्दा सुरुमा रेटिनामा रक्तस्राव हुन्छ र चिल्लो पदार्थ जम्मा हुन्छ । समयमै उपचार नभए नयाँनयाँ रक्तनसाको वृद्धिका साथै अत्यधिक रक्तस्राव हुने, पर्दा खुम्चने उप्कने र जलबिन्दुको समस्या भई सधैंका लागि दृष्टि गुम्ने खतरा पनि त्यत्तिकै हुन्छ । सुरुको अवस्थामा विरामीको कुनै पनि लक्षण देखिँदैन, तर दृष्टि धमिलो हुँदा रेटिनामा धेरै असर तथा क्षति भइसकेको हुन्छ, जसबाट दृष्टि बचाउन धेरै नै गाह्रो हुन्छ । डाइबेटिक रेटिनोपेथीका कारण मधुमेह भएको १५ वर्षका अवधिमा २ प्रतिशत विरामी दृष्टिविहीन हुने र १० प्रतिशत ज्यादै न्यून दृष्टि हुने गरेको देखिएको छ ।

११. कुनै एक प्रश्नको उत्तर दिनुहोस् : (४)

क) 'गाउँको विकासका लागि पर्यावरणमैत्री सडक आवश्यक छ' भन्ने कुरा खुलाउँदै साथीलाई चिठी लेख्नुहोस् ।

ख) आफ्नो प्रिय साथीलाई नयाँ वर्षको उपलक्ष्यमा दिइने शुभकामना पत्रको नमुना बनाउनुहोस् ।

१२. कुनै एक प्रश्नको उत्तर दिनुहोस् : (४)

क) आफूले भ्रमण गरेको कुनै ऐतिहासिक स्थलको प्रमुख गतिविधिलाई समेटेर १५० शब्दसम्म प्रतिवेदन लेख्नुहोस् ।

ख) 'पर्यापर्यटनको महत्त्व' शीर्षकमा कम्तीमा पनि १५० शब्द नघटाई वक्तृता तयार पार्नुहोस् ।

१३. 'सन्तानलाई सम्पत्ति होइन, संस्कार दिनु पर्छ' भन्ने विषयमा १२५ शब्दमा आफ्नो प्रतिक्रिया लेख्नुहोस् । (४)

१४. कुनै दुई प्रश्नको उत्तर दिनुहोस् : (४+४ = ८)

क) दिइएको जीवनीको अंश पढी सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस् :

सन्यासी जीवन सुरु गरेसँगै योगमायामा सामाजिक चेतना सलबलायो । उनी धार्मिक, सामाजिक, प्रशासनिक, आर्थिक तथा राजनीतिक क्षेत्रमा विद्यमान सबै खाले विकृतिहरूका बारेमा खुलेर विरोध गर्न थालिन् । उनी छुवाछुतलाई मानव सभ्यताको सबैभन्दा ठुलो कलङ्क ठान्थिन् । त्यसैले कुनै पनि सामाजिक कार्यमा मानिसहरूलाई छुत र अछुत तथा माथिल्लो जात र तल्लो जातमा छुट्याउनु घोर अपराध मान्थिन् । सनातनी परम्पराको नाममा जातका आधारमा फरक फरक कानून प्रचलनमा रहेको त्यस समयको समाजमा छुवाछुत र जातपात नमान्नु घोर आपत्तिको विषय हुन्थ्यो । त्यस्ता व्यक्तिहरू विभिन्न दण्डका भागी हुन्थे । त्यस्तो कठोर राणाकालीन समयमा पनि उनले छुवाछुत तथा वर्णाश्रमको खुलेर विरोध गरिन् । पूजाआराधना, भजनकीर्तन, प्रसाद वितरण र ग्रहणमा तिनीहरूलाई सहभागी गराएर उनले आफ्नो धारणालाई व्यवहारमा पनि उतारिन् । उनका थुप्रै भक्तहरू कथित दलित पनि थिए र उनीहरू सबै जना विनाभेदभाव सबै गतिविधिमा संलग्न हुन सक्थे । उनको आश्रममा प्रचलित यस किसिमको छुवाछुतरहित वातावरण देखेर कथित सनातनीहरू योगमायाको खुब आलोचना गर्थे ।

प्रश्नहरू

(अ) योगमायाको धर्मसम्बन्धी मान्यता कस्तो रहेको थियो ?

(आ) पाठसमेतका आधारमा योगमायाले गरेका सुधारका प्रयासहरूको वर्णन गर्नुहोस् ।

ख) दिइएको कवितांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

कुन पहाडले कुन खोलाले तिम्रो गति छेकेथ्यो र

वीर पुर्खा ! कुन आँधीले तिम्रो यात्रा रोकेथ्यो र

गरुडको भ्रँ वेग तिम्रो कुन आकाशले बाँध्न सक्यो

पौरखले रच्यौ नेपाल । पहाड तराई जुट्न सक्यो !

प्रश्नहरू

अ) वीर पुर्खाहरूले कस्तो पौरख गरेर नेपालको निर्माण गरेका छन् ?

आ) यस कवितांशको मुख्य आशय के हो ?

ग) दिइएको रिपोर्ताजको अंश पढी सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस् :

“उहाँले योग र ध्यानका सबै विधि सिकाउनु भयो र गर्न पनि लगाउनु भयो । आयुर्वेदिक औषधी पनि दिनु भयो ।” अमितले भने । “मनोचिकित्सकलाई पनि सोधियो, उहाँले त्यो पनि एउटा राम्रो पद्धति हो, आराम पनि हुन्छ भन्ने सल्लाह दिनु भयो । नभन्दै विस्तारै मन शान्त हुन थाल्यो । मैले योगको विषय पनि बोध गर्दै गएँ । यसमा यम, नियम, आसन, प्राणायाम, प्रत्याहार,

धारणा, ध्यान हुँदै समाधिसम्मको यात्रा गरिन्छ भन्ने पनि बुझौं । यस बोधले त मेरा मनका विकार हट्दै गए र जीवनमा बाँच्ने इच्छाशक्ति जागृत भयो ।” सुन्दरले भने । “अनि त म भन् योग र ध्यान सिक्न थालें र प्रशिक्षक बनौं । डाक्टर भा मेरा डाक्टर मात्रै नभएर गुरु पनि हुनु भयो ।”

प्रश्नहरू

- अ) सुन्दर छन्त्यालमा कसरी बाँच्ने इच्छाशक्ति जागृत भयो ?
 आ) योग साधनाले मानव स्वास्थ्यमा पार्ने प्रभावहरू के के हुन् ?

१५. कुनै एक प्रश्नको उत्तर दिनुहोस् : (८)
 क) 'लौ आयो ताजा खबर' लघु नाटकको मूल सन्देश के हो, समीक्षात्मक उत्तर लेख्नुहोस् ।
 ख) 'गाउँको माया' कथामा कस्तो समाजको चित्रण गरिएको छ, समीक्षात्मक उत्तर दिनुहोस् ।
१६. तल दिइएकामध्ये कुनै एक शीर्षकमा २५० शब्द नघटाई निबन्ध लेख्नुहोस् : (८)
 क) कृतिम बुद्धिमत्ता
 ख) नेपालका प्राकृतिक सम्पदाहरू
 ग) मेरो देश : मेरो स्वर्ग

सेन्ट अप परीक्षा - २०८१

कक्षा : ११

समय : ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : ३०

समूह: ख

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्ने छ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. तलका रेखाङ्कित वर्णहरूलाई उच्चारण स्थान र प्राणत्वका आधारमा छुट्टयाउनुहोस् : (३)
 विज्ञानका राम्रा पक्षहरू ज्यादा भएकाले र ती मानव जातिका निम्ति कामलाग्दा भएकाले मानिस मानिसको लागि विज्ञान वरदान भएको छ भनेर कुसले भन्छ ?
२. शुद्ध गरी पुनर्लेखन गर्नुहोस् : (३)
 एक वैज्ञानिकले भने, ब्रह्माण्ड सम्बन्धी नयाँ दृष्टिकोणको शुरुआत मुलतः उन्नाइसौं शताब्दीको प्रारम्भमा भएको थियो ।
३. रेखाङ्कित शब्दहरूको पदवर्ग छुट्टयाउनुहोस् : (२)
 आहा ! कति राम्रो खोला, भरना र गाउँ कति रमाइलो रहेछ । चराका बथान देखेर हामी रमायौं नि ।
४. दुवै प्रश्नको उत्तर दिनुहोस् : (२+२=४)
 क) तल दिएको अनुच्छेदबाट दुईओटा तत्सम र दुईओटा आगन्तुक शब्द पहिचान गरी लेख्नुहोस् :
 समयको गतिसँगै मन र मुटु बदलिए विज्ञान प्रविधिको आविष्कारले आज जीवन यान्त्रिक बनेको छ । मानवीय भावनाहरू स्मार्ट फोनबाट साटिन्छ अचेल । कम्प्युटर त कतै ! बुढो भयो रे ।
 ख) तल दिएका शब्दलाई शब्दकोशीय क्रममा मिलाएर लेख्नुहोस् :
 घटना, सहर, आधुनिक, शब्दकोश
५. कुनै एक प्रश्नको उत्तर दिनुहोस् : (३)
 क) तलको अनुच्छेदबाट तीनओटा पारिभाषिक पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् :
 छन्द र अलङ्कार कविताका गहना हुन् । आशुकविले आफ्ना कवितामा विम्ब र प्रतीकको प्रयोग गर्छन् । कवितामा अभिधा, लक्षणा र व्यञ्जना शब्द शक्तिको प्रयोग हुन्छ । नेपाली साहित्यमा लक्ष्मीप्रसाद देवकोटा स्वच्छन्दतावादी कवि हुन् । एक दर्जन बढी खण्डकाव्य र आधा दर्जन महाकाव्य लेखेका देवकोटा नेपाली साहित्यका महाकवि हुन् ।
 ख) तलको अनुच्छेदबाट एउटा उखान, एउटा टुक्का र एउटा अनुकरणात्मक शब्द पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् :
 परीक्षाको निकट पुग्दा पनि छोराछोरीलाई तातो नलागेको देखेर 'इलमीको भागमा माछा र मासु, अल्लेको भागमा आँसु' भनेर सम्झाएँ । जति सम्झाउँदा पनि कानमा तेल हालेर बस्नेहरू देख्दा आफूलाई 'आफू ताक्छु मुढो बन्चरो ताक्छ घुँडो' भइरहेको छ । धरधरी रोएर बस्नु मात्र बाँकी छ । तरतरी पसिना चुहाएर यिनीहरूकै लागि यत्रो दुख गरेको के काम लाग्यो !
६. तल दिइएका कुनै दुई प्रश्नको मात्र उत्तर दिनुहोस् : (२+२=४)
 क) तल दिएको अनुच्छेदबाट उपसर्ग लागेर बनेका दुईओटा र प्रत्यय लागेर बनेका दुईओटा शब्द पहिचान गरी त्यसको निर्माण प्रक्रिया देखाउनुहोस् :

मानिस प्रकृतिको उपज हो । प्राचीन कालदेखि नै मानिसले प्रकृतिसँग सिँगौरी खेलेको छ । यस सङ्घर्षमा प्रकृतिको प्रहारलाई मानिसले विनम्र रूपमा सहेको छ । यसै सङ्घर्षले गर्दा सामाजिक र वैज्ञानिक क्षेत्रमा पनि मानवीय उन्नति देखिन्छ ।

ख) तलको अनुच्छेदबाट दुईओटा समस्त शब्द र दुईओटा द्वित्व शब्द खोजी समस्त शब्दलाई विग्रह गर्नुहोस् र द्वित्व शब्दमा दोहोरिएको अंश छुट्याउनुहोस् :

गाउँकै दोबाटोमा बसेर देशवासीले भोगेका समस्याका बारेमा आआफ्ना विचार राख्ने युवावर्गमध्ये एउटाले जोसिँदै भन्यो “साथीहरू ! जनताका सुखदुःख नबुझ्ने दुई जिब्रे नेताहरूलाई नेतासेता केही नभनी दिनभर सबैको घरघर डुलाउँदै आइन्दा यसो गर्ने छैन भनी माफ मगाउनु पर्छ ।” यत्तिकैमा अर्कोले भन्यो, “गरी हेर न त ।”

ग) तलका अनुच्छेदबाट चारओटा सन्धियुक्त शब्द पहिचान गरी तिनको सन्धि विच्छेद गर्नुहोस् :

यशोधराले मनोरमालाई सरोवरमा स्नान गर्नका निम्ति सँगै जान आग्रह गरिन् तर मनोरमाले त्यसै समयमा वागीश्वरी आश्रममा काम भएकाले उनीसँग जान नसक्ने जानकारी दिइन् । यशोधरा पनि मनोरमाको कार्यमा सदभाव राखेर त्यस आश्रममा सदाचार कायम राख्ने कार्यमा जुटिन् । सरोवरमा जाने समयमा उनी वृद्धहरूको सेवार्थ जुटिन् ।

७. दुवै प्रश्नको उत्तर दिनुहोस् :

(२+२=४)

क) तलको अनुच्छेदलाई पुलिङ्ग भए स्त्रीलिङ्ग र स्त्रीलिङ्ग भए पुलिङ्गमा परिवर्तन गरी वाक्य ढाँचासमेत मिलाई पुनर्लेखन गर्नुहोस् :

चैत्र महिनाको तातो हावामा एउटा केटो दौडिरहेको थियो । एउटी महिलाले केटालाई फर्कन भन्दै कराइरहेकी थिई । केटोले फर्कने कुरो सुनै चाहेको थिएन । त्यो केटोले एउटी केटीलाई आफू नफर्कने कुरा सुनायो ।

ख) तलका वाक्यहरूलाई आवश्यक परिवर्तनसहित प्रथम पुरुषबाट द्वितीय पुरुषमा लैजानुहोस् :

म नेपाली हुँ । म सगरमाथा पुगेको छैन । म कहिले त्यहाँ पुगूँ भन्ने विचारमा छु । मैले अहिलेसम्म त्यहाँ जाने अवसर पाएको छैन ।

८. तलका दुवै प्रश्नको उत्तर दिनुहोस् :

(२+२=४)

क) तलका गद्यांशबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तारक र विधेय विस्तारक पहिचान गरी लेख्नुहोस् :

हिमाली अनकन्टार भू-भागमा रमाएर बाँच्ने हिमालवासीहरूले सबैलाई सडकटमा पनि बाँच्ने प्रेरणा दिन्छन् । उनीहरू आँधीवेरीको डटेर सामना गर्छन् । हिमाल जस्तै अटल हुन्छन् । सडकसँग भागेर हिँड्न खोज्नेहरू प्रत्येक युद्धमा परास्त हुन्छन् ।

अथवा

तलको अनुच्छेदका वाक्यलाई सङ्गति मिलाई पुनर्लेखन गर्नुहोस् :

मेरो बहिनी पोखराको मणिपाल कलेजमा डाक्टरी पढ्छ । मेरी भाइ चाहिँ सात कक्षामा पढ्छे । तपाईं पोखरा जान्छस् । म पनि बहिनी भेट्न जाँदै छु ।

ख) तलको वाक्यलाई करण भए अकरण अकरण भए करणमा परिवर्तन गर्नुहोस् :

वसन्त ऋतु नआउँदा आनन्द हुँदैन । भमराहरू गुन्गुनाउँदैनन् । नयाँ पालुवा पलाउँदैनन् । जल, थल, नभ सबै सफा देखिँदैनन् ।

अथवा

दिएका वाक्यहरूलाई अप्रत्यक्ष कथनमा परिवर्तन गर्नुहोस् :

अ) आमाले भन्नुभयो, “छोरा ! वगैँचाबाट फूल टिपेर लिएर आइज ।”

आ) मैले भनेँ, “कुन कुन फूल टिपेर ल्याऊँ आमा ?”

इ) आमाले भन्नुभयो, “लिली, गोदावरी र गुलाफ लिएर आउनु ।”

ई) मैले भनेँ, “हस् आमा ! म फूलहरू टिपेर आइहाल्छु ।”

९. दुवै प्रश्नको उत्तर दिनुहोस् :

(४+४=८)

क) तलको अनुच्छेद पढेर सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस् :

वाक्यमा प्रयुक्त पदको निश्चित क्रम हुन्छ । कुनै पनि भाषाका नाम, सर्वनाम, विशेषण, क्रिया, क्रियाविशेषण आदि शब्द वाक्यमा प्रयोग भइसकेपछि तिनलाई पद भनिन्छ । यिनै पदको रखाइ क्रम नै पदक्रम हो । भाषामा धेरै किसिमका पद भए पनि तिनले वाक्यमा प्रयुक्त हुँदा सम्पन्न गर्ने मुख्य कार्यका आधारमा कर्ता, कर्म र क्रिया गरी तीन प्रकारमा विभाजन गरेर अध्ययन गरिन्छ । संसारका प्रत्येक भाषाका वाक्यमा प्रयुक्त कर्ता, कर्म र क्रियाको निश्चित क्रम हुन्छ । यसैले पाठ्यक्रमका आधारमा संसारका भाषाको वर्गीकरण गरिन्छ र गरिएको पनि छ । पदक्रमका आधारमा संसारमा ६ किसिमका भाषाहरू रहेका छन् । नेपाली, मैथिली, हिन्दी, संस्कृत, जापानी, कोरियन, आदि भाषा कर्ता, कर्म र क्रियाको क्रम भएका भाषा हुन् । अङ्ग्रेजी, चाइनिज, रसियन, स्पेनिश, जर्मन, बुल्गेरियन आदि भाषा चाहिँ कर्ता, क्रिया र कर्मको क्रम भएका भाषा हुन भने

वेल्स, आइरिस, फिलिपिनो र बाइबलिक हिब्रु भाषा क्रिया, कर्ता र कर्मको क्रम भएका भाषा हुन् । फिजियन, मलागसी, तोबा, गिल्वाट्रिज आदि भाषामा चाँहि क्रिया, कर्म र कर्ताको क्रम रहेको हुन्छ । कर्म र क्रिया, कर्ता र कर्म, कर्ता र क्रियाको क्रम भएका भाषा भने अत्यन्तै कम छन् । ब्राजिलको हिक्ज्यारियाना भाषा कर्म, क्रिया, कर्ता र भनेनेजुएलाको बाराओ भाषा, कर्म, कर्ता र क्रियाको क्रम भएका भाषा हुन् । यस किसिमका पदक्रमलाई सामान्य पदक्रम वा व्याकरणिक पदक्रम भनिन्छ । साहित्यिक भाषामा व्याकरणिक पदक्रममा आएका पद निश्चित उद्देश्यले राखिएका हुन्छन् । यस्ता पद विशेष गरी स्रष्टाको भनाइमा जोड दिन वा शीर्ष बन्न प्रयोग हुन्छन् । नेपालीमा कर्ता, कर्म र क्रियाको क्रममा विचलन भएको पदक्रम आलङ्कारिक वा विशिष्ट पदक्रम हो । यस्तो पदक्रममा व्याकरणलाई भन्दा भावलाई प्रधानता दिइन्छ ।

प्रश्नहरू

- क) पदक्रमका आधारमा संसारका भाषालाई कति प्रकारमा वर्गीकरण गरिएको छ ?
 ख) नेपाली र अङ्ग्रेजी कस्तो कस्तो पदक्रम भएका भाषा हुन् ?
 ग) भाषामा विचलन किन हुन्छ ?
 घ) कस्तो पदक्रमले भावलाई प्रधानता दिन्छ ?

ख) तलको अनुच्छेद पढी सोधिएका प्रश्नहरूको उत्तर दिनुहोस् :

थाङ्का नेपालीहरूको राम्रो व्यवसाय हो । विशेषतः तामाङ समुदायका लाखौं मानिस थाङ्का व्यवसायमा आश्रित छन् । आजभोलि अरू जातका मानिसहरू पनि यस पेसामा संलग्न हुन थालेका छन् । हजारौं मानिसले यसलाई मुख्य पेसा बनाएका छन् । बर्सेनी अरबौं रूपैयाँका थाङ्का विदेशमा बेचिएका हुन्छन् । यसबाट भुक्तानी सन्तुलनमा सकारात्मक प्रभाव पर्नुका साथै राष्ट्रिय आम्दानीसमेत बढेको छ । संसारमा थाङ्काका साथसाथै बुद्धका मूर्तिहरूको पनि उत्तिकै माग छ । कतिपय बौद्धमार्गीहरू थाङ्काका साथसाथै बुद्धका मूर्तिहरू पनि लैजान्छन् । नेपालमा बुद्धसम्बन्धी मात्र उत्पादन पनि हुने गरेको छ ।

क) थाङ्का व्यवसायमा विशेष रूपमा को आश्रित छ ?

- अ) तामाङ जाति आ) अन्य जाति इ) हजारौं मानिस ई) बौद्धमार्गी

ख) थाङ्का विदेशमा बेच्दा के हुन्छ ?

- अ) व्यापार घाटा आ) भुक्तानी सन्तुलनमा सकारात्मक प्रभाव
 इ) रोजगारी वृद्धि ई) गौतम बुद्धको प्रचार

ग) नेपालमा के हुने गरेको छ ?

- अ) बुद्धसम्बन्धी उत्पादन आ) सुरक्षित लगानी इ) कृषिको आधुनिकीकरण ई) श्रम स्वीकृति

घ) 'बर्सेनी अरबौं रूपैयाँका थाङ्का विदेशमा बेचिएका हुन्छन् ।' वाक्यमा 'अरबौं' शब्दको पदवर्ग कुन हो ?

- अ) नामयोगी आ) विशेषण इ) नाम ई) क्रियापद

१०. तलको अनुच्छेद राम्ररी पढी चारओटा बुँदा टिप्नुहोस् र एक तृतीयांशमा सारांश लेख्नुहोस् : (२+२=४)

शिक्षामा महिलाहरू पछि पर्नुमा आर्थिक तथा सामाजिक कारणहरू नै प्रमुख भए तापनि देशको भौगोलिक बनावट तथा विगतमा राजनीतिक कारण पनि रहेको थियो । शिक्षामा महिला सहभागिता कम हुनुका आर्थिक र सामाजिक कारणहरूका रूपमा आर्थिक विपन्नता, शैक्षिक चेतनाको कमी, परम्परागत सामाजिक धारणा, अन्धविश्वास तथा रूढिवाद, छिटो विवाह, घरायसी काममा महिलाको बढी संलग्नता आदिलाई लिन सकिन्छ । यस्तो अवस्थामा महिला शिक्षाको उपयुक्त विकासका लागि उल्लिखित कारणहरूलाई ध्यानमा राखेर योजना बनाई कार्यक्रमहरू सञ्चालन गर्नु पर्दछ । खास गरी महिला शिक्षाप्रति रहेका नकारात्मक धारणा, अन्धविश्वास, सामाजिक भेदभाव हटाई शैक्षिक चेतनामा अभिवृद्धि गर्ने खालका कार्यक्रमहरू सञ्चालन गरी सबैले पढ्न पाउने अधिकारको कदर गर्ने र छोरीहरूलाई स्कुल पठाउने कार्यमा समाजलाई अभिप्रेरित गरिनु आवश्यक छ । त्यसै गरी भौगोलिक दृष्टिले विकट र दुर्गम क्षेत्रहरूमा विद्यालय तथा अन्य शिक्षण संस्था खोल्ने कामलाई प्राथमिकता दिनु र विपन्न वर्गका लागि आयमूलक कार्यक्रम तथा उपयुक्त रोजगारीको अवसर सिर्जना गरिनु आवश्यक देखिन्छ ।

११. कुनै एक प्रश्नको उत्तर दिनुहोस् :

- क) तपाईंको विद्यालयमा आयोजना हुने दन्त शिविर सञ्चालनसम्बन्धी सूचनाको एउटा नमुना तयार पार्नुहोस् ।
 ख) आफ्नो भाइको व्रतबन्धको अवसरमा आफन्तजनलाई आमन्त्रण गर्न हजुरआमाको तर्फबाट दिइने निमन्त्रणा पत्रको नमुना तयार पार्नुहोस् ।

१२. कुनै एक प्रश्नको उत्तर दिनुहोस् :

- क) आफ्नो कलेजले आयोजना गरेको कुनै कविता प्रतियोगिताका सबै कुरा समेटि १५० शब्दसम्मको एउटा प्रतिवेदन तयार पार्नुहोस् ।
 ख) 'महिला हिंसा समाधानमा समाजको भूमिका' शीर्षकमा १५० शब्दसम्मको वक्तृता लेख्नुहोस् ।

१३. 'वीर पुर्खा' कविता पढेपछि तपाईंको मनमा कस्तो विचार पैदा भयो, प्रतिक्रिया दिनुहोस् ।

१४. कुनै दुई प्रश्नको उत्तर दिनुहोस् :

- क) तलको गद्यांश पढी दिइएका प्रश्नको उत्तर लेख्नुहोस् :

मित्र सुरज ! अवश्य नै पढाइ छोडेर धन कमाउन परदेसिने मेरो निर्णय अत्यन्त गलत थियो । धन कमाउन नसके पनि आफ्नो गाउँ, आफ्नो परिवार, इष्टमित्र, समाज र देश सम्भेर घर फर्कने यो मेरो निर्णय गलत हुने छैन । त्यसो त निर्णय आफैँमा सही वा गलत हुँदैन । त्यसलाई सही वा गलत बनाउने त हामी आफैँले हो । त्यसैले घर फर्कने मेरो यो निर्णयलाई म जसरी पनि सही साबित गर्छु ।

प्रश्नहरू

- अ) म पात्रले गरेका सही र गलत निर्णय के के थिए?
आ) म पात्रको घर फर्कने निर्णयप्रति तपाईंको धारणा लेख्नुहोस् ।

ख) दिइएको कवितांश पढी सोधिएका प्रश्नहरूको उत्तर दिनुहोस् :

डिगर्चामा डोब तिम्रो चिसो हिउँभित्र होला
वेत्रावती किनारभरि पौरखको चिनो होला
वीर पुर्खा ! तिमीलाई मितेरीले मात्र बाँध्यो
सागर तरी संसारभरि वीर गोर्खा रगत बग्यो ।

प्रश्नहरू

अ. माथिको कवितांशमा हाम्रा पुर्खाहरूले लडेको कुन युद्धको सम्झना गरिएको छ ? चर्चा गर्नुहोस् ।

आ. 'सागर तरी संसारभरि वीर गोर्खा रगत बग्यो ।' यस कथनको आशय के हो ?

ग) दिइएको कथांश पढी सोधिएका प्रश्नहरूको उत्तर दिनुहोस् :

“परिछन ! यसो भनेर किन मलाई लज्जत पाछो ? गाउँ तिमीहरूकै हो । तिमीहरूकै हँसिया, खुर्पी, कोदालो र पाखुरीका बलमा गाउँ बाँचेको छ, गाउँका इज्जत भनेका तिमीहरू नै हो । तिमीहरूकै आडमा गाउँ अभिमानी भएको छ । तिम्रो पाखुरीले यो खोलाको धारलाई त फर्काउँछ भने गाउँको इज्जत माथि नउठाउला त ... !”

प्रश्नहरू

अ) कृष्णले किन परिछनलाई गाउँको इज्जत भनेको हो ?

आ) यसै कथांशलाई आधार बनाएर किसन कस्तो चरित्र हो ? सङ्क्षेपमा लेख्नुहोस् ।

१५. कुनै एक प्रश्नको समीक्षात्मक उत्तर लेख्नुहोस् :

(८)

क) नेपाली संस्कृतिका सबल र दुर्बल पक्ष के के छन्, विश्लेषण गर्नुहोस् ।

ख) पर्यापर्यटनको माध्यमद्वारा नेपालको गरिवी कसरी निवारण गर्न सकिन्छ, चर्चा गर्नुहोस् ।

१६ तल दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्दसम्मको निबन्ध लेख्नुहोस् :

(८)

क) जलवायु परिवर्तन ख) शिक्षा र अनुशासन ग) प्रकृति नै मेरो जीवन

एन.ई.बी. नमुना प्रश्नपत्र (२०७८)

समय: ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : २७

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्नेछ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

१. दिइएको अनुच्छेदका रेखाङ्कित वर्णहरूको उच्चारण स्थान र प्राणत्व छुट्याई लेख्नुहोस् :

३

योगमाया लैङ्गिक विभेदको पनि कट्टर विरोधी थिइन् । उनी बाल विवाहको विपक्षमा उभिन्थिन् तर स्वैच्छिक विधवा विवाहको समर्थन गर्थिन् ।

२. शुद्ध गरी पुनर्लेखन गर्नुहोस् :

३

हेर्नुस् बढीजी हामीले खेतमा राशायनिक मल र विषादिको प्रयोग गर्‍यौं । वालीको उत्पादन बढाउने काममा साथीहरूले तपाईं सँग सल्लाह मागेका छन् ।

३. अनुच्छेदमा रेखाङ्कन गरिएका शब्दको पदवर्ग पहिचान गरी लेख्नुहोस् : २
आज उनले मलाई धेरै कुराहरू सोधे । उनले सोधेका कुराहरूमध्ये खासै धेरै बुझिनँ । मैले केमा कुरा भयो भन्ने पनि राम्ररी बुझिनँ । उनले मलाई फोनबाट बाँकी कुरा सुनाए ।

४. दिइएका प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)

(क) दिइएको अनुच्छेदबाट दुई दुईओटा तत्सम र आगन्तुक शब्द पहिचान गरी लेख्नुहोस् ।

क्रमशः अग्लो हुँदै गएको कष्टप्रद, कठोर, दुर्गम पहाडको क्षीण पथलाई नजरले भेटेसम्म हेर्दा मान्छे पो हो कि भन्ने भ्रम पार्ने एउटा धब्बा जस्तो पनि केही देखिएन ।

(ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :

व्यवहार, अंश, त्रास, ज्ञान

५. दिइएको अनुच्छेदबाट तीनओटा पारिभाषिक शब्द पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् : ३

हिजोभन्दा आज हरेक सङ्क्रामक रोगको उपचार खोपद्वारा सम्भव हुँदै गएको छ । देशमा कुपोषणबाट मृत्यु हुने बालबालिकाहरूको तथ्याङ्क सार्वजनिक गरिएको अभिलेखबाट थाहा पाउन सकिन्छ ।

अथवा

दिइएको अनुच्छेदबाट एउटा अनुकरणात्मक शब्द, एउटा उखान र एउटा टुक्का पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् :

हुने विरुवाको चिल्लो पात भने भैं सवै साथीलाई मेख मार्दै परीक्षामा प्राप्त गरेको स्वप्निलको सफलताबाट उसका अभिभावक खुसीले गद्गद भए । अकबरी सुनलाई कसरी लगाउनु पर्दैन भन्दै मेधावी विद्यार्थी स्वप्निलले सबैको नाक राखेकामा आफूलाई धेरै खुसी लागेको कुरा विद्यालयका प्रधानाध्यापकले मुसुमुसु हाँस्दै सबैलाई बताए ।

६. कुनै दुई प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)

(क) अनुच्छेदबाट दुईओटा उपसर्ग र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :

प्रमुख राजनीतिक दलहरूले गैरजिम्मेवार बनेर मुलुकलाई अनिर्णयको बन्दी बनाउनु हुँदैन । दलीय कर्तव्य र राष्ट्रिय जिम्मेवारीलाई बुझेर सकेसम्म चाँडै नै निकास दिने काममा केन्द्रित हुनु आवश्यक छ ।

(ख) अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह गर्नुहोस् र दुईओटा द्वित्व शब्द पहिचान गरी दोहोरिएको अंश छुट्याउनुहोस् :

देश हितमा लागेका पीताम्बर र नीलकण्ठ आआफ्नो कर्तव्य पूरा गर्दै गाउँवस्तीको उन्नतिमा मनवचनकर्मले लागेका छन् । एकअर्कामा सरसहयोग र मरमदत गर्ने अनि सुखदुःखमा साथ दिन उनीहरूको आनीबानीको छरछिमेकमा मुक्तकण्ठले प्रशंसा हुने गरेको छ ।

(ग) अनुच्छेदबाट चारओटा सन्धियुक्त शब्द पहिचान गरी सन्धि विच्छेद गर्नुहोस् :

हाम्रा देशको हिमाली सौन्दर्य, प्राकृतिक भूबनोट पुरातात्विक महत्वका वस्तुहरूको अवलोकन गर्न विदेशी पर्यटकहरू नेपालमा आउँछन् । उनीहरू नेपालीहरूको आतिथ्य सत्कारबाट हर्षित हुँदै हँसिलो अनुहार लगाई स्वदेशतर्फ फर्कन्छन् ।

७. दिइएका दुवै प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)

(क) दिइएको अनुच्छेदलाई पुलिङ्ग भए स्त्रीलिङ्ग र स्त्रीलिङ्ग भए पुलिङ्गमा परिवर्तन गरी पुनर्लेखन गर्नुहोस् :

उनले गद्य शैलीमा कविता लेखे । त्यस कवितालाई मेरी माइजुले मन पराउनुभयो । काकी र फूपुले कविता वाचन गरेर सुनाउने इच्छा गर्नुभयो । मैले पनि उहाँहरूसँगै कविता वाचन गरेर सुनाएकी थिएँ ।

(ख) दिइएको अनुच्छेदलाई एकवचन भए बहुवचन र बहुवचन भए एकवचनमा परिवर्तन गरी पुनर्लेखन गर्नुहोस् :

मैले गाउँमा पुरानो साथीलाई भेटें । हामीले चराहरू र जलचरहरूका बारेमा धेरै बेर कुरा गर्‍यौं । साथीले आफ्नो प्रगतिको कथा सुनायो । उसका कुरा सुनेर मेरा साथीहरू दङ्ग परे ।

८. कुनै एक प्रश्नको उत्तर दिनुहोस् । ४

(क) तलका गद्यांशबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तार र विधेय विस्तार पद पहिचान गरी लेख्नुहोस् :

प्रतिभाशाली रमा नियमित विद्यालय जान्छे । पढाइका साथै खेलकुदमा पनि रुचि राख्छे । हिजो गुरुले पुरस्कार पनि दिनुभयो । साथीहरूले पनि उसको तारिफ गरे ।

अथवा

दिइएको अनुच्छेदलाई सङ्गति मिलाई पुनर्लेखन गर्नुहोस् :

मेरो आमा पहाडमा बस्छन् । ऊ असल हुनुहुन्छ । त्यहाँबाट अग्लो हिमालहरू हेर्न पाइन्छ । तिमी पनि हिमाल हेर्न आएको छ ।

(ख) दिइएको वाक्यलाई करण भए अकरण र अकरण भए करणमा परिवर्तन गरी अनुच्छेद पुनर्लेखन गर्नुहोस्:

उनीहरू सधैं पुस्तक प्रदर्शनीमा जान्छन् । सबैले केही पुस्तकहरू किन्छन् । भिडभाडमा केही पनि खाँदैनन् । उनीहरूलाई कति थकाइ लाग्दैन ।

अथवा

दिइएका वाक्यहरूलाई प्रत्यक्ष भए अप्रत्यक्ष र अप्रत्यक्ष भए प्रत्यक्ष कथनमा परिवर्तन गर्नुहोस् :

(अ) मलाई दुई दिन बस्न राजनले आग्रह गर्‍यो ।

(आ) तिमीले मलाई भन्यौ, “हामी पनि जाऔंला ।”

(इ) साथीले त्यतिखेर के काम गर्नु छ भनी प्रश्न गरे ।

(ई) हामीले भन्यौ, “उनीहरू चाँडै आउँछन् ।”

९. दुवै प्रश्नको उत्तर दिनुहोस् ।

(४ + ४ = ८)

(क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर लेख्नुहोस् :

जलका विभिन्न स्वरूप हुन्छन् । पग्लिने, अग्लिने र उड्ने सक्ने क्षमता पानीमा हुन्छ । हिउँ पग्लिएर नदी बन्दा नदीको पानी बाफ बन्छ र हिमालका थाप्लामा हिउँ जम्छ । ठोस, तरल, ग्याँस मात्र होइन पानीमा आगो ओकल्ने ऊर्जा हुन्छ । विद्युत् पानीबाटै निकालिन्छ । यस्तो महत्वपूर्ण चमत्कारी पानी सदुपयोग गरे बन्दछ सुखी जिन्दगानी, दुरुपयोग भए दुःखमै बित्छ जिन्दगानी । ठोस, तरल, ग्याँस, राप, ताप, तेजसँगैको ऊर्जाले विश्वमा अ विकासका सारा स्वरूपलाई चुनौती दिइरहेको छ । आज हामी आफैँसँगको बिना नचिनेर भौँतारिइरहेको कस्तुरी भैं भएका छौं । जलस्रोतमा धनी राष्ट्र भए पनि दिगो पूर्वाधार विकासका योजनाका अभावले गर्दा हामी स्रोत र साधन भए पनि अँध्यारामा बस्न बाध्य छौं । उर्वराभूमि भएर पनि सिँचाइका आधुनिक प्रविधि अपनाउन नसक्दा जग्गा बाँभै छन्, जनता भोकभोकै छन् । युवाशक्ति विदेशिन बाध्य छन् । विकास निर्माणले विश्वलाई चकित पार्ने छिमेकीलाई टुलुटुलु हेरेर गाँस, बासकै समस्यामा पिरोलिन बाध्य छ हाम्रो समाज । यो अवस्थालाई बदलेर विश्व प्रतिस्पर्धामा होमिन सक्न बनाउने क्षमता जलस्रोतमा मात्र छ । हामी अमृत समान हिमालको कञ्चन पानी बोटलमा बेचेर विश्वका मानिसको तिर्खा मेटाउन सक्छौं । कर्नालीमा जलविहार, कोसी र तामाकोसीमा सिँचाइका उचित व्यवस्थापन गरेर धर्ती उवरा बनाउन सक्छौं ।

प्रश्नहरू

(क) पानीलाई महत्वपूर्ण चमत्कारी किन भनिएको हो ?

(ख) जलस्रोत र ऊर्जाका क्षेत्रमा दिगो विकास कसरी गर्न सकिन्छ ?

(ग) धर्तीलाई उर्वरा बनाउने आधारहरू के के हुन् ?

(घ) राष्ट्र निर्माणमा सिँचाइको कस्तो भूमिका हुन्छ होला ?

(ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

मुलुकमा रहेको बेरोजगार एवम् अनुत्पादक श्रम शक्तिलाई उनीहरूको योग्यता, सिप तथा दक्षता अनुरूप अन्य विभिन्न मुलुकमा रोजगारीका लागि पठाई उनीहरूमाफत वैदेशिक विप्रेषण आय, सिप, प्रविधि र अनुभव स्वदेशमा भित्र्याइन्छ । नेपालको अर्थव्यवस्थामा वैदेशिक रोजगारीको योगदान उल्लेखनीय रहेको छ । विगतको द्वन्द्वको समयमा अर्थतन्त्रका आन्तरिक पक्षहरू कृषि, उद्योग, व्यापार लगायतका क्षेत्रहरूमा नकारात्मक असर परेको अवस्थामा समेत वैदेशिक रोजगारीले निरन्तर टेवा पुऱ्याए तापनि दक्ष कामदार १.५ प्रतिशत, २४ प्रतिशत अर्धदक्ष र ७४.५ प्रतिशत अदक्ष जनशक्ति विदेशिने हुँदा नेपालले यसबाट पूर्ण लाभ लिन सकिरहेको छैन । नेपाली कामदारको मुख्य गन्तव्यका रूपमा कतार, मलेसिया, बहराइन, साउदी अरेविया, संयुक्त अरब इमिरेट्स र कुबेत रहेका छन् । वैदेशिक रोजगार विकासको दीर्घकालीन स्रोत होइन । मुलुकभित्रै कृषि क्षेत्रको आधुनिकीकरण एवम् व्यवसायीकरण, उद्योग क्षेत्रको विकास र विस्तार तथा विविध स्वरोजगारीका अवसर सिर्जनामाफत बाध्यात्मक वैदेशिक रोजगारीको अन्त्य गरी दक्ष एवम् सिपयुक्त जनशक्तिलाई मात्र वैदेशिक रोजगारीमा परिचालन गर्दै वैदेशिक रोजगारीलाई सुरक्षित, मर्यादित र व्यवस्थित गरेमा नेपालले आर्थिक विकासमा वैदेशिक रोजगारीबाट अधिकतम लाभ लिन सकिन्छ ।

प्रश्नहरू

(क) विप्रेषण शब्दको अर्थ कुन हो ?

(अ) रेमिट्यान्स

(आ) तलब

(इ) रोजगारी

(ई) आम्दानी

(ख) नेपालको अर्थतन्त्रका आन्तरिक पक्षहरू के के हुन् ?

(अ) व्यापार र जडीबुटी (आ) यातायात र शिक्षा

(इ) स्वास्थ्य र रोजगार

(ई) कृषि र उद्योग

(ग) विकासको दीर्घकालीन स्रोत के हो ?

(अ) वैदेशिक रोजगारी (आ) सुरक्षित लगानी (इ) कृषिको आधुनिकीकरण (ई) श्रम स्वीकृति

(घ) नेपाली कामदारको मुख्य गन्तव्यका रूपमा कतार, मलेसिया, बहराइन, साउदी अरेबिया, संयुक्त अरब इमिरेट्स र कुवेत रहेका छन् । भन्ने वाक्यमा 'गन्तव्य' कस्तो शब्द के हो ?

(अ) उपसर्ग व्युत्पन्न (आ) प्रत्यय व्युत्पन्न (इ) समस्त शब्द (ई) द्वित्व शब्द

१०. अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश गर्नुहोस् ।

(२ + २ = ४)

हाम्रो समाज मूर्त र अमूर्त संस्कृतिको मिश्रण हो । हाम्रा गाउँ तथा सहरमा प्राचीन सभ्यताका धरोहर जड यत्रतत्र छन् । साकेला, चासोक, च्याब्रुङ र धान नाचमा रमाउने मन हुडकेली, सोरठी र मारुनीमा त्यत्तिकै रमाउँछ । देउडा र घाटुले भौगोलिक सीमा नाघेर बास्ना छरेका छन् । चान्दी, डाँडी, हनुमान् र पञ्चबुद्ध नृत्यहरू हाम्रा मुटुका ढुकढुकी बनेका छन् । शास्त्रीय र लोक नृत्य, गीत र वादनमा हाम्रा अनन्य सम्पदा छन् । स्याब्रो र तिजीले सखिया, सन्थाल र सरायसँग मितेरी लाउँछन् । भुओ, खैजडी, बालुन, सँगिनी र लाखे पहाडी सौन्दर्य बनेका छन् । बाली लाउँदा, भित्र्याउँदा, दाईं गर्दा गाइने गीतहरू पुनर्जीवनको आस गर्दै छन् । गन्धर्व, चर्या, खाँडो र गाथाहरू कुनाकन्दरामा जीवितै छन् । यहाँ भाषाको भण्डार छ । संस्कार, रीतिरिवाज र परम्पराका पारखीहरू हाम्रा गाउँमा भुल्छन्, सहरमा रमाउँछन् । खानपान र पहिरनमा जातीय, क्षेत्रीय र सामुदायिक विविधता छन् । मन्दिर, विहार, मस्जिद, गिर्जाघर, गुरुद्वारा, थान र मार्गास्थानहरू हाम्रा आस्थाका केन्द्र हुन् । हामी भाषा, धर्म, संस्कृति र परम्परामा बहुल छौं तर आपसमा सहिष्णु छौं । यो नै विश्वमा हाम्रो अनुपम पहिचान हो ।

११. कुनै एक प्रश्नको उत्तर दिनुहोस् ।

४

(क) स्थानीय स्वास्थ्य केन्द्रले सर्वसाधारण जनतालाई कोरोना भाइरस विरुद्धको खोप लगाउन जारी गर्ने सार्वजनिक सूचनाको नमुना तयार पार्नुहोस् ।

(ख) कसैको शुभ विवाहका अवसरमा आफन्तजनहरूलाई आमन्त्रण गर्न दिइने निमन्त्रणा पत्रको नमुना तयार पार्नुहोस् ।

१२. कुनै एक प्रश्नको उत्तर दिनुहोस् ।

४

(क) आफ्नो विद्यालयको वार्षिकोत्सवको सन्दर्भमा आयोजित विविध कार्यक्रमलाई समेटि १५० शब्दसम्मको प्रतिवेदन लेख्नुहोस् ।

(ख) 'राष्ट्रनिर्माणमा नागरिकको भूमिका' विषयमा १५० शब्दसम्मको वक्तृता तयार पार्नुहोस् ।

१३. महिलामाथि हुने हिंसालाई कसरी नियन्त्रण गर्न सकिएला ? १२५ शब्दसम्ममा आफ्नो प्रतिक्रिया लेख्नुहोस् ।

४

१४. कुनै दुई प्रश्नको उत्तर लेख्नुहोस् ।

(४ + ४ = ८)

(क) दिइएको कवितांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

कुन पहाडले कुन खोलाले तिम्रो गति छेकेथ्यो र
वीर पुर्खा ! कुन आँधीले तिम्रो यात्रा रोकेथ्यो र
गरुडको भैं वेग तिम्रो कुन आकाशले बाँध्न सक्यो
पौरखले रच्यो नेपाल ! पहाड तराई जुट्न सक्यो ।

प्रश्नहरू

(अ) नेपालीहरूको कस्तो पौरखले नेपालको रचना भएको हो ?

(आ) हाम्रा वीरपुर्खाको गौरव गाथालाई कविताका आधारमा वर्णन गर्नुहोस् ।

(ख) दिइएको नाट्यांश पढी सोधिएका प्रश्नको छोटो उत्तर दिनुहोस् :

ठिक भन्नुभो बाबा । सन्तानको सुख र शिक्षाका लागि भन्दै म रातदिन खटिएँ तर मैले मेरो छोरालाई समय दिइँनँ । उससँग बसेर उसको पढाइका बारेमा कुरा गरिँनँ । उसका साथी को को छन् भनेर कहिल्यै सोधखोज गरिँनँ । ऊ कहाँ गयो, के गर्‍यो, के खायो भनेर ख्याल गरिँनँ । म त खालि मेरो व्यवसाय, बैठक आदि भन्दै दौडधुप गरिरहेँ । उसले मागे जति पैसा दिइरहेँ तर ऊ त धेरै पहिलेदेखि दुर्व्यसनको सिकार भइसकेको रहेछ र आज मैले यो दिन भोग्नुप्यो ।

प्रश्नहरू

(अ) यस नाट्यांशमा वक्ताले आफ्ना के कस्ता कमजोरी रहेको स्विकारेका छन् ?

(आ) यस नाट्यांशमा व्यक्त समस्या कसरी समाधान गर्न सकिएला ?

(ग) दिइएको निबन्धांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

विहङ्गम दृष्टिले विचार गर्दा सम्पूर्ण पृथ्वी एउटा घर हो, गृह हो । यहाँ जल, स्थल, वायु, आकाश र तेज (प्रकाश) यी पाँच तत्व (पञ्चतत्व) का विच जलचर, स्थलचर, नभचर र सबै चराचर आफ्नो जीवन बिताउँदछन् । पृथ्वीलाई छोडेर अन्य ग्रहमा जीवात्माको अस्तित्व भेटिएको छैन । त्यसैले हामी सबैले यहीं बाँच्नुपर्छ, यहीं मर्नुपर्छ । यो सिवाय अरु जाने ठाउँ छैन । पृथ्वीको पारिस्थितिक प्रणालीलाई बिथोलिएको भने हाम्रै अस्तित्व सडकटमा पर्छ । हालका दिनमा जलवायु परिवर्तनका विषयमा विशेष गरेर वायुमण्डल प्रदूषणका कारण पृथ्वी सतह अप्रत्यासित ढङ्गले तात्ने क्रमलाई लिएर विशेष चिन्ता र चासो हाम्रोसामु तेर्सिएको छ ।

प्रश्नहरू

- (अ) पृथ्वी कसरी सबैको साभ्ना घर हुनसक्दछ ?
(आ) पृथ्वीको तात्ने क्रमलाई रोक्न के गर्न सकिन्छ ?

१५. कुनै एक प्रश्नको उत्तर दिनुहोस् ।

६

- (क) सत्यनिष्ठा र समतामूलक समाजको स्थापनामा योगमायाले दिएको योगदानको चर्चा गर्नुहोस् ।
(ख) 'गाउँको माया' कथामा कस्तो समाजको चित्रण गरिएको छ, समीक्षात्मक उत्तर लेख्नुहोस् ।

१६. दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्दसम्ममा नघटाई निबन्ध लेख्नुहोस् ।

६

- (क) नेपालमा जलस्रोतको सम्भावना
(ख) युवा र स्वरोजगार
(ग) मेरो देश : मेरो कर्मभूमि

एन.ई.बी.परीक्षा - २०७९

समय: ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : २७

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्नेछ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. तलका रेखाङ्कित वर्णहरूलाई उच्चारण स्थान र प्राणत्वका आधारमा छुट्टयाउनुहोस् :

समास शब्द निर्माण गर्ने एक महत्वपूर्ण प्रक्रिया हो ।

३

२. शुद्ध गरी पुनर्लेखन गर्नुहोस् :

एक वैज्ञानीकले भने, ब्रह्माण्ड सम्बन्धी नयाँ दृष्टिकोणको शुरुआत मुलतः उन्नाईसौं सताब्दीको प्रारम्भमा भएको थियो र

३

३. अनुच्छेदमा रेखाङ्कन गरिएका पदको पदवर्ग पहिचान गरी लेख्नुहोस् :

२

नेपाली भएर नेपाली पुस्तक पढ्न नचाहनु के राम्रो कुरा हो र ?

४. दिइएको प्रश्नको उत्तर दिनुहोस् :

(२ + २ = ४)

क) तल दिएको अनुच्छेदबाट दुईओटा तत्सम र दुईओटा आगन्तुक शब्द पहिचान गरी लेख्नुहोस् :

समयको गतिसँगै मन र मुटु बदलियो । विज्ञान र प्रविधिको आविष्कारले आज जीवन यान्त्रिक बनेको छ । मानवीय भावनाहरू स्मार्ट फोनबाट साटिन्छ, अचेल । कम्प्युटर त कठै ! बुढो भयो रे ।

(ख) तल दिइएका शब्दलाई शब्दकोशीय क्रममा मिलाएर लेख्नुहोस् :

घटना, सहर, आधुनिक, शब्दकोश

५. तलको अनुच्छेदबाट एउटा उखान, एउटा टुक्का र एउटा अनुकरणात्मक शब्द पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस्

: ३

परीक्षाको निकट पुग्दा पनि छोराछोरीलाई तातो नलागेको देखेर इलमीको भागमा माछा र मासु अल्लेको भागमा आँसु भनेर सम्झाएँ । जति सम्झाउँदा पनि कानमा तेल हालेर बस्नेहरू देखा आफूलाई आफू ताक्छ मुढो बच्चरो ताक्छ घुँडो भइरहेको छ । धरधरी रोएर बस्नु मात्र बाँकी छ । तरतरी पसिना चुहाएर यिनीहरूकै लागि यत्रो दुख गरेको के काम लाग्यो !

अथवा

तलको अनुच्छेदबाट तीनओटा पारिभाषिक शब्द खोजी त्यसलाई वाक्यमा प्रयोग गर्नुहोस् :

छन्द र अलङ्कार कविताका गहना हुन् । आशुकविले आफ्ना कवितामा विम्ब र प्रतीकको प्रयोग गर्छन् । कवितामा अविधा, लक्षणा र व्यञ्जना शब्द शक्तिको प्रयोग हुन्छ । नेपाली साहित्यमा लक्ष्मीप्रसाद देवकोटा स्वच्छन्दतावादी कवि हुन् । एक दर्जन बढी खण्डकाव्य र आधा दर्जन महाकाव्य लेखेका देवकोटा नेपाली साहित्यका महाकवि हुन् ।

६. कुनै दुई प्रश्नको उत्तर दिनुहोस् ।

(२ + २ = ४)

क) अनुच्छेदबाट दुईओटा उपसर्ग र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :

जुन देशमा प्राकृतिक स्रोत र सम्पदाको प्रचुरता छ त्यस देशले अत्यधिक विकास गरेको हामीले अनुभव गरेकै छौं । प्राकृतिक स्रोत र सम्पदाको न्यूनता हुँदा देशविकासको कार्य सोचेजति सहज हुँदैन भन्ने कुरा निर्विवाद हो ।

ख) अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह गर्नुहोस् र दुईओटा द्वित्व शब्द पहिचान गरी दोहोरिएको अंश छुट्याउनुहोस् :

चौबाटोमा भैँभगडा र नाराजुलुस गरेर देश बन्ने भए नेपाल उहिल्यै बनिस्क्थ्यो । जबसम्म प्रत्येक देशवासीका मनमनमा देशभक्तिको भावना जादैन, आपस आपसमा मिलीजुली राष्ट्र निर्माण गर्दैनन्, तबसम्म देशको विकास दिवास्वप्न मात्र हुनेछ ।

ग) अनुच्छेदबाट चारओटा सन्धियुक्त शब्द पहिचान गरी सन्धि विच्छेद गर्नुहोस् :

मेरो विद्यालयको पूर्वोत्तर दिशाबाट ज्यादै मनोरम दृश्य देखिन्छ । सूर्योदयको क्षणमा हिमालयको कान्तिले सर्वत्र उज्यालो छर्छ । सूर्यास्तको क्षणमा कुशासनमा बसी सान्ध्योपासना गर्नेहरूको ताँतीले पनि मनै हर्छ ।

७. तलका दुवै प्रश्नको उत्तर दिनुहोस् :

(२ + २ = ४)

क) तल दिइएको अनुच्छेदलाई पुलिङ्गा भए स्त्रीलिङ्गमा र स्त्रीलिङ्गमा भए पुलिङ्गमा परिवर्तन गर्नुहोस् :

मेरो छोरो क्याम्पस गयो । बहिनीलाई पनि साथैमा लग्यो । बहिनी सरासर कक्षामा पसी । छोरो चाहिँ साथीसँग कुरा गर्न थाल्यो ।

ख) दिइएको अनुच्छेदलाई एकवचन भए बहुवचन र बहुवचन भए एक वचनमा परिवर्तन गर्नुहोस् :

उनीहरू गाएको हप्ता जुम्ला घुम्न गए । म चाहिँ घरमा नै बसेँ । मैले घरमा बसेर उपन्यास पढेँ । उनीहरूले जुम्लाको स्याउ खाए ।

८. तलका दुवै प्रश्नको उत्तर लेख्नुहोस् :

(२ + २ = ४)

क) तलका वाक्यहरूबाट दुईओटा उद्देश्य र विधेय तथा दुईओटा उद्देश्य विस्तारक र विधेय विस्तारक पहिचान गरी लेख्नुहोस् :

(अ) प्रतिभाशाली लेखकहरू पनि आवश्यकताभन्दा बढी भावुक हुन्छन् ।

(आ) जीवन र जगत्का बारेमा बुझेकाहरूले अरूलाई राम्ररी बुझाए हुन्थ्यो ।

(इ) सधैं भविष्यप्रति चिन्तित मेरी छोरी पढाइलाई महत्त्व दिन्छे ।

(ई) असाध्यै मिल्ने मेरो साथी विशेष कामका लागि विदेशतिर लाग्दै छ ।

अथवा

दिइएको अनुच्छेदलाई सङ्गति मिलाई पुनर्लेखन गर्नुहोस् :

उनीहरू हिजो विदेशबाट आयो । आमाले उनीहरूका लागि खाना पकाएर राखेको छ । आमासँग मेरो बहिनी पनि बस्छ । आमा मलाई असाध्यै माया गर्छ ।

ख) दिइएको वाक्यलाई करण भए अकरण र अकरण भए करणमा परिवर्तन गर्नुहोस् :

यो गाउँ जाने बाटो हो । बाटोमा तपाईं र म संगै हिडौं । तपाईंले मेरो कुरा मान्नु भएन । साँझ पर्दा हामी गाउँमा पुग्दैनौं कि ?

अथवा

दिइएका वाक्यहरूलाई प्रत्यक्ष भए अप्रत्यक्ष र अप्रत्यक्ष र भए प्रत्यक्ष कथनमा परिवर्तन गर्नुहोस् :

अ) उनलाई मैले आज नआउने जानकारी दिएँ ।

आ) सञ्जयले भने, “लोभ गर्नु, अरूलाई पीडा दिनु र श्रमशोषण गर्नु महापाप हो ।”

इ) केटाकेटीले विदेशबाट फर्कदा के ल्याइदिनुहुन्छ भनी प्रश्न गरे ।

ई) आमाले भन्नुभयो, “समयमै पढाइलाई महत्त्व देऊ नत्र भविष्य अन्धकारमय छ ।”

९. दुवै प्रश्नको उत्तर दिनुहोस् :

(४ + ४ = ८)

क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नहरूको उत्तर दिनुहोस् :

मिथिला लोककला अत्यन्त प्राचीन र लोकप्रिय कला हो । यस कलामा मिथिला लोकमानस अनेक माध्यमहरूबाट अभिव्यक्त हुँदै आएको छ । यसको सुरुवात, संवर्द्धन र संरक्षणमा महिलाहरूको योगदान उल्लेखनीय छ । सामान्यत विभिन्न माङ्गलिक अवसर पारेर घरको भित्तामा, चोक आँगनमा, भाँडाहरूमा तथा लुगाकपडामा समेत यस्ता कलाकृतिको निर्माण गर्ने गरिन्छ । मैथिल लोककलालाई भित्ताचित्र, भूमिचित्र, पटचित्र, काष्ठचित्र, वास्तुचित्र भाण्डचित्र र व्यक्तिचित्र गरेर अध्ययन गरिएको पाइन्छ । मैथिल कलाकृतिमा सङ्कटबाट सुरक्षा र भविष्यका लागि कल्याणको कामना तथा स्वास्थ्य र समृद्धिको शुभकामना अभिव्यक्त भएको हुन्छ । मैथिल लोककलामा अल्पना निकै प्रसिद्ध छ । यो मैथिली महिलाहरूद्वारा विभिन्न माङ्गलिक अवसरमा आ-आफ्ना घरआँगन, ढोकाचोक आदिमा चित्रित विभिन्न आकारप्रकारको रेखाचित्र हो । अल्पनालाई घरमा आउँदा र निस्कँदाको शुभसाइतको द्योतक मानिएको छ । यो पानीमिश्रित चामलको पिठोबाट षट्कोण, अष्टकोण र स्वस्तिक जस्ता विभिन्न आकारमा पनि बनाइन्छ ।

प्रश्नहरू

(अ) अल्पना किन निर्माण गरिन्छ ?

(आ) मिथिला लोककलामा महिलाको कस्तो भूमिका छ ?

(इ) मिथिला लोककलालाई के कसरी वर्गीकरण गरिएको छ ?

(ई) माङ्गलिक र द्योतक शब्दको अर्थ लेख्नुहोस् ।

ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

निश्चय नै मानवीय सभ्यताको उदय र विश्वव्यापी प्रसारभन्दा अघि घटित भएका विनाशलीलाहरू प्रकृतिद्वारा गरिएका हुन् । मानव जातिले विनाशकारी विपत्तिका घटनाले खडा गरेको सन्त्रासको प्रतिरोध गर्दै क्रमशः ती विनाशकारी विपत्तिपूर्ण घटनाहरूमाथि विजय प्राप्त गर्दै आयो । यस्ता सन्त्रासप्रतिको मानवीय प्रतिरोधको फलस्वरूप इन्जिनियरिङ परियोजनाहरू, विनाशकारी घटना प्रतिरोधी कार्यक्रम र मौसम विज्ञान विकसित भए । स्वास्थ्य विज्ञान र चिकित्साशास्त्रको विकास केही हदसम्म प्लेग भनिने सङ्क्रामक रोगको सामना गर्ने अति जरुरी आवश्यकताको फलस्वरूप भएको हो जसले एक ताक विश्वलाई नै विध्वंस गरेको थियो । वास्तवमा अधिकांश आधुनिक विज्ञान विनाशकारी विपत्तिका घटनाहरूसँगको लडाइँबाट विकसित भएका छन् । तर आज प्राकृतिक नभई मानवकृत विनाशकारी विपत्तहरूले नै मानव जातिको अस्तित्वलाई पूर्णतः रोकिदिने सन्त्रास र खतराको अनुभव गराइरहेका छन् । विज्ञानको तीव्र प्रयोगमार्फत मानिसले विनाशकारी विपत्तहरूबाट बच्ने क्रममा प्रकृतिको भन्दा धेरै ठुलो शक्ति विकसित गरेको छ ।

प्रश्नहरू

क) प्रतिरोध शब्दको अर्थ कुन हो ?

अ) प्रतिफल प्राप्त हुनु आ) बल प्रयोगलाई रोक्ने काम

इ) प्रगति गर्दै जाने मानिस ई) प्रतिगमन

ख) आधुनिक विज्ञानको विकास कसरी भएको हो ?

अ) विपत्तिका घटनाहरूसित जुध्दै अगाडि बढ्ने क्रममा

आ) विनाशकारी घटनाको प्रतिफलका रूपमा

इ) इन्जिनियरिङ परियोजनाहरूको विकासको क्रममा

ई) मौसम विज्ञानको विकासको रूपमा

ग) आदिम कालमा भएका विनाशलीलाको कारक कसलाई मान्न सकिन्छ ?

अ) मानव जातिलाई

आ) विश्वव्यापी प्रसारलाई

इ) सभ्यताको विकासलाई

ई) प्रकृतिलाई

घ) निश्चय नै मानवीय सभ्यताको उदय र विश्वव्यापी प्रसारभन्दा अघि घटित भएका विनाशहरू प्रकृतिद्वारा गराइएका हुन् भन्ने वाक्यमा 'सभ्यताको' कस्तो शब्द हो ?

अ) निपात

आ) संयोजक

इ) नाम

ई) विशेषण

१०. तलको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश लेख्नुहोस् :

(२ + २ = ४)

शिक्षामा महिलाहरू पछि पर्नुमा आर्थिक तथा सामाजिक कारणहरू नै प्रमुख भए तापनि देशको भौगोलिक बनावट तथा विगतमा राजनीतिक कारण पनि रहेको थियो । शिक्षामा महिला सहभागिता कम हुनुका आर्थिक र सामाजिक कारणहरूका रूपमा आर्थिक विपन्नता, शैक्षिक चेतनाको कमी, परम्परागत समाजिक धारणा, अन्धविश्वास तथा रूढिवाद, छिटो विवाह, घरायसी काममा महिलाको बढी संलग्नता आदिलाई लिन सकिन्छ । यस्तो अवस्थामा महिला शिक्षाको उपयुक्त विकासका लागि उल्लिखित कारणहरूलाई ध्यानमा राखेर योजना बनाई कार्यक्रमहरू सञ्चालन गर्नुपर्दछ । खास गरी महिला शिक्षाप्रति रहेका नकारात्मक धारणा, अन्धविश्वास, सामाजिक भेदभाव हटाई शैक्षिक चेतनामा अभिवृद्धि गर्ने खालका कार्यक्रमहरू सञ्चालन गरी सबैले पढ्न पाउने अधिकारको कदर गर्ने र छोरीहरूलाई स्कुल पठाउने कार्यमा समाजलाई अभिप्रेरित गरिनु आवश्यक छ । त्यसै गरी भौगोलिक दृष्टिले विकट र दुर्गम क्षेत्रहरूमा विद्यालय तथा अन्य शिक्षण संस्था खोल्ने कामलाई प्राथमिकता दिनु र विपन्न वर्गका लागि आयमूलक कार्यक्रम तथा उपयुक्त रोजगारीको अवसर सृजना गरिनु आवश्यक देखिन्छ ।

११. कुनै एक प्रश्नको उत्तर दिनुहोस् :

४

क) आफ्नो भाइको ब्रतबन्धको अवसरमा आफन्तजनलाई आमन्त्रण गर्न हजुरआमाको तर्फबाट दिइने निमन्त्रणा पत्रको नमुना तयार पार्नुहोस् ।

ख) तपाईंको विद्यालयमा आयोजना हुने दन्त शिविर सञ्चालनसम्बन्धी सूचनाको एउटा नमुना तयार पार्नुहोस् ।

१२. कुनै एक प्रश्नको उत्तर लेख्नुहोस् :

४

क) आफ्नो विद्यालयले आयोजना गरेको वक्तृत्वकला कार्यक्रमका मुख्य गतिविधिहरू समेटी एउटा प्रतिवेदन तयार पार्नुहोस् ।

ख) 'महिला सशक्तीकरण' विषयमा १५० शब्दसम्मको टिप्पणी तयार पार्नुहोस् ।

१३. कोरोनाले मानव सभ्यतामाथि पारेको प्रभावलाई समेट्दै १२५ शब्दमा आफ्नो प्रतिक्रिया लेख्नुहोस् ।

४

१४. कुनै दुई प्रश्नको उत्तर लेख्नुहोस् :

(४ + ४ = ८)

क) दिइएको जीवनीको अंश पढी सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस् :

सन्यासी जीवन सुरु गरेसँगै योगमायामा सामाजिक चेतना सलबलायो । उनी धार्मिक, सामाजिक, प्रशासनिक, आर्थिक तथा राजनीतिक क्षेत्रमा विद्यमान सबै खाले विकृतिहरूका बारेमा खुलेर विरोध गर्न थालिन् । उनी छुवाछुतलाई मानव सभ्यताको

सवैभन्दा ठुलो कलङ्क ठान्थिन् । त्यसैले कुनै पनि सामाजिक कार्यमा मानिसहरूलाई छुट र अछुत तथा माथिल्लो जात र तल्लो जातमा छुट्याउनु घोर अपराध मान्थिन् । सनातनी परम्पराको नाममा जातका आधारमा फरक फरक कानून प्रचलनमा रहेको त्यस समयको समाजमा छुवाछुत र जातपात नमान्नु घोर आपत्तिको विषय हुन्थ्यो । त्यस्ता व्यक्तिहरू विभिन्न दण्डका भागी हुन्थे । त्यस्तो कठोर राणाकालीन समयमा पनि उनले छुवाछुत तथा वर्णाश्रमको खुलेर विरोध गरिन् । पूजाआराधना, भजनकीर्तन, प्रसाद वितरण र ग्रहणमा तिनीहरूलाई सहभागी गराएर उनले आफ्नो धारणालाई व्यवहारमा पनि उतारिन् । उनका थुप्रै भक्तहरू कथित दलित पनि थिए र उनीहरू सबै जना विनाभेदभाव सबै गतिविधिमा संलग्न हुन सक्थे । उनको आश्रममा प्रचलित यस किसिमको छुवाछुतरहित वातावरण देखेर कथित सनातनीहरू योगमायाको खुब आलोचना गर्थे ।

प्रश्नहरू

- (अ) योगमायाको धर्मसम्बन्धी मान्यता कस्तो रहेको थियो ?
 (आ) पाठसमेतका आधारमा योगमायाले गरेका सुधारका प्रयासहरूको वर्णन गर्नुहोस् ।

ख) दिइएको कवितांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

कुन पहाडले कुन खोलाले तिम्रो गति छेकेथ्यो र
 वीर पुर्खा ! कुन आँधीले तिम्रो यात्रा रोकेथ्यो र
 गरुडको भैं वेग तिम्रो कुन आकाशले बाँध्न सक्थ्यो
 पौरखले रच्यो नेपाल । पहाड तराई जुट्न सक्थ्यो !

प्रश्नहरू

- (अ) वीर पुर्खाहरूले कस्तो पौरख गरेर नेपालको निर्माण गरेका छन् ?
 (आ) यस कवितांशको मुख्य आशय के हो ?

ग) दिइएको रिपोर्टाजको अंश पढी सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस् :

“उहाँले योग र ध्यानका सबै विधि सिकाउनुभयो र गर्न पनि लगाउनुभयो । आयुर्वेदिक औषधी पनि दिनुभयो ।” अमितले भने । “मनोचिकित्सकलाई पनि सोधियो, उहाँले त्यो पनि एउटा राम्रो पद्धति हो, आराम पनि हुन्छ भन्ने सल्लाह दिनुभयो । नभन्दै विस्तारै मन शान्त हुन थाल्यो । मैले योगको विषय पनि बोध गर्दै गएँ । यसमा यम, नियम, आसन, प्राणायाम, प्रत्याहार, धारणा, ध्यान हुँदै समाधिसम्मको यात्रा गरिन्छ भन्ने पनि बुझें । यस बोधले त मेरा मनका विकार हट्दै गए र जीवनमा बाँच्ने इच्छाशक्ति जागृत भयो ।” सुन्दरले भने । “अनि त म भन्नु योग र ध्यान सिक्न थालें र प्रशिक्षक बनेँ । डाक्टर भन्ना मेरा डाक्टर मात्रै नभएर गुरु पनि हुनुभयो ।”

प्रश्नहरू

- (अ) सुन्दर छत्त्यालमा कसरी बाँच्ने इच्छाशक्ति जागृत भयो ?
 (आ) योग साधनाले मानव स्वास्थ्यमा पार्ने प्रभावहरू के के हुन् ?

१५. कुनै एक प्रश्नको उत्तर दिनुहोस् :

- क) “लौ आयो ताजा खबर” लघुनाटकमा व्यक्त मुख्य सन्देशलाई समीक्षात्मक विश्लेषण गर्नुहोस् ।
 ख) नेपालको पर्यावरणले पर्यटनलाई कसरी सहयोग पुर्याएको छ ? समीक्षात्मक उत्तर दिनुहोस् ।

१६. दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्दसम्ममा नघटाई निबन्ध लेख्नुहोस्:

- क) शिक्षा र अनुशासन ख) जलवायु परिवर्तन ग) मलाई मनपर्ने पुस्तक

एन.ई.बी.परीक्षा - २०८०

समय: ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : २७

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्नेछ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. तल दिइएका रेखाङ्कित वर्णहरूलाई उच्चारण स्थान र प्राणत्व छुट्याउनुहोस् :

मान्छे, प्रकृति र वातावरणविचको सुम्बन्ध र सन्तुलनलाई लिएर आजभोलि इकोफ्रेन्डली, इकोटुरिजम आदि शब्दहरूको प्रयोग हुन थालेको छ ।

२. शुद्ध गरी पुनर्लेखन गर्नुहोस् :

अमितले भने योग ध्यान र श्वासस्थका वारेको रुची मेरो सानै देखिको हो !

३. अनुच्छेदमा रेखाङ्कन गरिएका शब्दको पगवर्ग पहिचान गरी लेख्नुहोस् : २
सुन्दर छन्त्यालको कथा नै मैले खोज्ने कथा थियो । यसमा मेरो मन विश्वस्त भएपछि उनको फोन नम्बर लिएर फर्केँ ।
४. दिइएका प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)
(क) दिइएका अनुच्छेदबाट दुई दुईओटा तत्सम र आगन्तुक शब्द पहिचान गरी लेख्नुहोस् :
आजभोलि नेपालको आकाशमा पर्वतीय उडानहरू, ह्यान्ड ग्लाइडिङ्ग, प्याराग्लाइडिङ्ग, अल्ट्रा लाइट एयर क्राफ्ट आदि विभिन्न पर्यटकीय क्रियाकलापसँगै बन्जी जम्पिङ्ग जस्तो साहसी पर्यटन पनि लोकप्रिय बन्दै छ ।
(ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :
त्रिशूल, शङ्कर, ज्ञान, क्षमा
५. दिइएका कुनै एक प्रश्नको उत्तर दिनुहोस् : ३
(क) दिइएको अनुच्छेदबाट तीनओटा पारिभाषिक शब्द पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् :
नेपाललाई कृषि प्रधान देश भनिए पनि आजभोलि सरकारले यस क्षेत्रलाई बेवास्ता गरेका कारण धेरै कृषकले यो क्षेत्र छोडिसकेका छन् । आफ्नै तरिकाले कृषि गरेकाले पनि अत्यधिक रासायनिक मल र कीटनाशक विषादीको प्रयोग गरेकोले उपभोक्ता मारमा परेका छन् ।
(ख) दिइएको अनुच्छेदबाट एउटा उखान, एउटा टुक्का र एउटा अनुकरणात्मक शब्द पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् :
अहिले समाजमा मुखमा रामराम बगलीमा छुरा प्रवृत्तिका मान्छेहरूको बिगबिगी बढेको देखेर हामी मुखमा दही जमाएर बस्नु हुँदैन । जति जोगी आए पनि कानै चिरेको सरकारसँग अपेक्षा गर्नुभन्दा यस्ताहरूको पर्दाफास गर्न सबैले नै कम्मर कसेर खुर्खुरु लाग्नुपर्छ नत्र धुरधुर रुनुपर्ने समय आउँछ ।
६. कुनै दुई प्रश्नको उत्तर दिनुहोस् । (२ + २ = ४)
(क) अनुच्छेदबाट दुईओटा उपसर्ग र दुईओटा प्रत्यय व्युत्पन्न शब्द पहिचान गरी तिनको निर्माण प्रक्रिया देखाउनुहोस् :
वर्तमान समयमा विश्व नै आर्थिक मन्दीको समस्याले पीडित हुन थालेको छ । यसले विदेशलाई मात्र नभई स्वदेशलाई पनि प्रभाव पार्ने कुरा विभिन्न सञ्चारमाध्यममा आइरहेको छ । यसबाट बच्न हामी सबैले विदेशी वस्तुको प्रयोग कम गरी स्वदेशी वस्तुको प्रयोग बढी गर्नुपर्ने देखिन्छ ।
(ख) तलको अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह गर्नुहोस् अनि दुईओटा द्वित्व शब्द पहिचान गरी दोहोरिएको अंश छुट्याउनुहोस् :
दोबाटोमा बसेर एक जना दाइले लामपुच्छे चरा र धवलागिरि हिमालको चित्र बनाइरहेका थिए । दर्शकदीर्घाबाट सबैले आफ्नो खल्तीबाट पैसा दिइरहेका थिए । चित्रकार दाइले “मलाई पैसासैसा चाहिँदैन बरू मेरो चित्रकारिताको महत्त्व बुझेर नेपालको गाउँगाउँमा पर्यापर्यटन प्रवर्द्धनमा लाग्नुहोस्” भन्नुभयो ।
(ग) तलका अनुच्छेदबाट चारओटा सन्धियुक्त शब्द पहिचान गरी तिनको सन्धि विच्छेद गर्नुहोस् :
अन्तुडाँडाबाट देखिने सूर्योदयको दृश्य, हिमालय पर्वत श्रृङ्खला, वन्यजन्तु दृश्यावलोकन आदिको लागि प्रत्येक दिन हजारौं पर्यटकहरू नेपाल आउने गर्छन् । यसलाई व्यवस्थित गरी दीर्घकालीन बनाउन पर्यटकलाई सदैव स्वागत गरी मनोरम वातावरण बनाउनु आवश्यक छ ।
७. दिइएका प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)
(क) तलको अनुच्छेदका वाक्यलाई मध्यम आदरमा परिवर्तन गर्नुहोस् :
तँ विद्यालयमा जा । शिक्षकलाई भेटेर मेरो कुरा सुना । साथीलाई पनि हाम्रो घर बोला । ऊ आएपछि राम्रोसँग पढ ।
(ख) तलको अनुच्छेदका वाक्यलाई पुलिङ्ग भए स्त्रीलिङ्ग, स्त्रीलिङ्ग भए पुलिङ्गमा परिवर्तन गर्नुहोस् :
छोरी उच्च शिक्षाका लागि विदेश गई । उसले आमालाई घुम्नको लागि अमेरिका बोलाई । बुबाले त्रिभुवन विमानस्थलमा आएर आमाको बिदाई गर्नुभयो । अमेरिका पुगेपछि आमाले बुबालाई फोन गर्नुभयो ।
८. दिइएका प्रश्नको उत्तर दिनुहोस् : (२ + २ = ४)
(क) तल दिइएको अनुच्छेदबाट दुई दुईओटा उद्देश्य, विधेय र उद्देश्य विस्तार र विधेय विस्तार पहिचान गर्नुहोस् :
बिहानैदेखि काममा गएका खेताहरूले दिनभरि खेतमा काम गरे । काम गरेर घर फर्कदा उनीहरू धेरै थके । सहयोगी मनका धनी उनीहरू मिहिनेती छन् । सबैले उनीहरूको प्रशंसा गरे ।
अथवा
तल दिइएका अनुच्छेदलाई सङ्गति मिलाई लेख्नुहोस् :
भाइ बजार गइन् । उनले त्यहाँ प्रशस्त सामान किन्नुभयो । सामान लिन बहिनी सडकसम्म पुग्यो । उनीहरूले सामान लिएर घर आइपुग्दा आमा खुसी भइन् ।
(ख) तलको अनुच्छेदमा भएका वाक्यहरूलाई करण भए अकरण र अकरण भए करणमा परिवर्तन गर्नुहोस् :

मेरो छोरो परीक्षामा कहिल्यै पास हुँदैन । उसको पढाइले गर्दा मेरो मन दुख्छ । छोरी भने सधैं राम्रो गर्छे । उसलाई पढ भन्ने पर्दैन ।

अथवा

तलका वाक्यहरूको कथन परिवर्तन गर्नुहोस् :

आमाले भन्नुभयो, “छोरा विदेश नजाऊ ।” छोराले भन्यो, “आमा नेपालमा हाम्रो भविष्य राम्रो होला र ?” आमाले भन्नुभयो, “आफ्नो भविष्य आफै बनाउनुपर्छ ।” छोराले भन्यो, “हुन्छ आमा ।”

९. दुवै प्रश्नको उत्तर दिनुहोस् :

(४ + ४ = ८)

(क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर लेख्नुहोस् :

विश्व स्वास्थ्य सङ्गठनको परिभाषाअनुसार राम्रो स्वास्थ्य भनेको रोग वा दुर्बलताको अभाव मात्र नभएर शारीरिक, मानसिक रूपले पूर्ण तन्दुरुस्तीको अवस्था हो । जुन देशका नागरिकहरू स्वस्थ हुन्छन्, त्यस्तो देशको प्रगति द्रुततर हुन्छ । कुनै पनि देशको स्वास्थ्य स्थिति कति सबल छ भन्ने कुरा त्यहाँका नागरिकहरूमा सुर्तीजन्य पदार्थको प्रयोगको स्थिति, उच्च रक्तचाप तथा मोटोपनको स्थिति (स्वास्थ्य जोखिम), शुद्ध पानीको उपलब्धता, औसत आयु, कुपोषणग्रस्त जनसङ्ख्याको प्रतिशतका साथै दुर्घटना, द्वन्द्व वा प्राकृतिक विपत्ति जस्ता अन्य कारणबाट हुने मृत्युको अवस्था आदिमा निर्भर हुन्छ । यस्ता सूचकका आधारमा संसारकै सबैभन्दा राम्रो स्वास्थ्य स्थिति भएको देशको रूपमा स्पेनलाई लिइन्छ । लगभग १००० वर्षको इतिहास भएको चिकित्सा विज्ञान मानव सभ्यताको महत्त्वपूर्ण कान्छो उपलब्धि हो र यसको मुख्य उद्देश्य व्यक्तिको शारीरिक तथा मानसिक स्वास्थ्यलाई उच्चतम बिन्दुमा पुऱ्याउनु हो । स्वास्थ्य विज्ञानमा रोकथाम, निदान र निवारणको तीनओटा विधिमा ध्यान दिइन्छ । यी विधिमध्ये चिकित्सा विज्ञान मुख्यतया निदान र निवारणमै अल्झिएको छ । रोग लागेपछि उपचार गर्नुभन्दा रोग लाग्न नदिनु नै उत्तम हो भन्ने उक्तिलाई कम महत्त्व दिइएको छ । अर्थात् चिकित्सा विज्ञानमा रोकथामलाई भन्दा रोग लागिसकेपछि उपचार गर्ने परिपाटीले बढी महत्त्व पाएको छ । यद्यपि पछिल्लो समयमा विभिन्न किसिमको खोप, जनहितमा जारी हुने विभिन्न रोकथामको गतिविधिमा पनि तानिन थालेको छ ।

प्रश्नहरू

क) स्वस्थ हुनु भनेको के हो ?

ख) देशका नागरिकको स्वास्थ्य स्थिति कुन कुरामा निर्भर हुन्छ ?

ग) चिकित्सा विज्ञान कसरी रोकथामतिर पनि केन्द्रित हुन थालेको छ ?

घ) चिकित्सा विज्ञानमा कुन कुराले बढी महत्त्व पाएको छ ?

(ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

रसायन शास्त्रको विकासका प्रारम्भिक चरणहरूमा सैद्धान्तिक एवम् प्रयोगात्मक व्याख्या गर्ने क्रममा अनेकौँ रासायनिक प्रयोगहरू गरिए । प्रारम्भमा रासायनिक विद्या अभ्यास गर्ने मानिसहरू आधारभूत धातु, जस्तै - फलामलाई सुवर्ण धातुमा परिवर्तन गर्ने प्रयासमा लागेका थिए । त्यसै गरी मानिसहरू अजम्मरी बुटीको खोजीमा पनि लागेका थिए । तर यी दुवै प्रयासहरू पूर्णतः सफल हुन सकेनन् तापनि त्यसै खेर भने गएनन् । यी साध्यहरूको उपलब्धि गराउने कार्यमा संलग्न मानिसहरूले त्यस अवधिमा अँगालेका साधनहरूको माध्यमबाट रसायन विद्यालाई नयाँ मोड दिनमा निकै सफल भए । फलस्वरूप नयाँ पदार्थहरूको आविष्कार हुन सक्यो, यी पदार्थहरू थिए - मदिरा, खनिज, अम्ल (तेजाब), अनेकौँ लवणहरू । रसायन शास्त्र आधुनिक समाजमा क्रान्तिकारी परिवर्तन ल्याउनमा निकै सहायक सिद्ध भएको छ । रासायनिक विद्याको अभावमा कृषि, औषधी, जनस्वास्थ्य, उद्योगधन्दा, यातायात, युद्ध सामग्री र खानी सम्बन्धी अनेकौँ वस्तुहरूको उत्पादन र विकास प्रायः असम्भव हुन आउँछ । मलखाद, कीटनाशक औषधीहरू, फारपात नाश गर्ने रसायनहरू जस्ता कृषि सम्बन्धी सामग्रीहरूको प्रयोगबाट कृषि उत्पादनमा अभूतपूर्व वृद्धि हुँदै गइरहेको छ भने उता विभिन्न प्रकारका रोगहरूको निदानका लागि शुद्ध रसायन विद्यामा आधारित सुरक्षित एवम् असरदार औषधीहरू आविष्कार भएका छन् । जनस्वास्थ्यका लागि अति महत्त्वपूर्ण मानिएका पानी र खाद्य पदार्थहरूको गुणात्मकता वृद्धि गर्नमा समेत रसायन शास्त्रको अतुलनीय योगदान रहिआएको छ । रसायन शास्त्रकै विकासबाट विभिन्न उपभोग्य सामग्रीहरू, विलासिताका सामानहरू र युद्ध सामग्रीहरूको आविष्कार भएको हो । आजको युगमा दैनिक प्रयोगमा ल्याइने विभिन्न वस्तुहरू रासायनिक प्रविधिकै कारणबाट मात्र सम्भव हुन गएका छन् र साँच्चै भन्ने हो भने आधुनिक उद्योगहरूको विकास र संवर्द्धनमा समेत रासायनिक प्रविधि नै मेरुदण्डका रूपमा स्थापित भएको छ ।

प्रश्नहरू

क) प्रारम्भमा रासायनिक विद्याको अभ्यासमा के गरिएको थियो ?

अ) कृषिसम्बन्धी सामग्रीको खोजी

आ) फलामलाई सुवर्ण धातुमा परिवर्तन गर्ने प्रयास ।

इ) खानीको उत्पादन र विकास

ई) युद्ध सामग्रीहरूको विकास

ख) सुरुमा कस्ता पदार्थहरूको आविष्कार भयो ?

अ) फलाम, सुन, चाँदी र हिरा
इ) मलखाद, कीटनाशक औषधीहरू

आ) मदिरा, खनिज, अम्ल र अनेकौं लवणहरू
ई) युद्ध सामग्रीहरू

ग) अजम्मरी भनेको के हो ?

अ) निरोगी आ) धेरै रोगी इ) कहिल्यै नमर्ने र बुढो नहुने ई) एक प्रकारको ठुलो रूख

घ) 'सुरक्षित' कुन निर्माण प्रक्रियाबाट निर्मित शब्द हो ?

अ) सर्ग प्रक्रिया आ) समास प्रक्रिया इ) द्वित्व प्रक्रिया ई) सन्धि प्रक्रिया

१०. तलको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश लेख्नुहोस् :

४

पाठ्यक्रम एउटा बृहत् योजना हो । पाठ्यक्रमले सम्पूर्ण शैक्षिक क्रियाकलापलाई एकीकृत गरी तोकिएका सिकाइउपलब्धिहरू हासिल गर्नमा निश्चित मार्ग निर्देशन गरेको हुन्छ । पाठ्यक्रम निर्माणमा विद्यार्थी, शिक्षक, अभिभावक र समाजका सबै वर्गका अपेक्षालाई ध्यान दिइएको हुन्छ । साथै यसमा स्थानीय, राष्ट्रिय, क्षेत्रीय तथा अन्तर्राष्ट्रिय परिप्रेक्ष्यसमेतलाई सम्बोधन गरिएको हुन्छ । पाठ्यक्रमले समाजको चाहना, बालआवश्यकता, बालरूचि र क्षमता, राष्ट्रको आवश्यकता जस्ता महत्त्वपूर्ण पक्षलाई समेटेको हुन्छ । यसै गरी कुन कक्षाका विद्यार्थीले कुन विषयमा कतिसम्म ज्ञान, सिप र धारणा आर्जन गर्नुपर्ने हो त्यसको समेत निक्कै गरिन्छ । यसरी निक्कै गर्ने क्रममा विषयविशेषज्ञ र पाठ्यक्रमविज्ञहरूको विशेष भूमिका रहेको हुन्छ । त्यसपछि निर्धारण गरिएका सिकाइ उपलब्धिहरूका आधारमा पाठ्यवस्तु तय गरिन्छ । पाठ्यवस्तु शिक्षण गर्न वा पाठ्यवस्तुका आधारमा विद्यार्थीको व्यवहारमा परिवर्तन ल्याउन आवश्यक पाठ्यसामग्री र शैक्षिक सामग्रीको सूचीसमेत पाठ्यक्रममा सङ्केत गरिएको हुन्छ । निर्धारित पाठ्यवस्तुलाई शैक्षिक सामग्रीको प्रयोगबाट कसरी शिक्षण गर्ने र उपयुक्त विधि कसरी छनोट गर्ने भन्ने कुराको निर्देशन पनि पाठ्यक्रममा रहेको हुन्छ । विद्यार्थीहरूको व्यवहार परिवर्तनको परीक्षणका लागि उचित मूल्याङ्कन पद्धतिको निर्देशन पनि पाठ्यक्रममा गरिएको हुन्छ ।

११. कुनै एक प्रश्नको उत्तर दिनुहोस् :

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क) तपाईंको विद्यालयले आयोजना गर्न लागेको वनभोज कार्यक्रममा सहभागी हुन आग्रह गर्दै विद्यार्थीहरूका लागि जारी गरिने सूचनाको नमुना तयार पार्नुहोस् ।

ख) आफ्नो नातिको विवाहमा हजुरआमाको तर्फबाट आफन्तलाई गरिने आमन्त्रणको निमन्त्रणापत्रको नमुना तयार पार्नुहोस् ।

१२. कुनै एक प्रश्नको उत्तर लेख्नुहोस् :

४

क) युनाइटेड क्लबले आयोजना गरेको खेलकुद कार्यक्रमका मुख्य घटनालाई समेटि १५० शब्दसम्मको प्रतिवेदन लेख्नुहोस् ।

ख) 'नेपालको जलस्रोत : देश विकासको आधार' शीर्षकमा १५० शब्दसम्मको वक्तृता तयार पार्नुहोस् ।

१३. हाम्रो समाजमा रहेको छुवाछुत प्रथालाई कसरी हटाउन सकिएला? १२५ शब्दसम्ममा आफ्नो प्रतिक्रिया लेख्नुहोस् ।

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१४. कुनै दुई प्रश्नको उत्तर लेख्नुहोस् :

(४ + ४ = ८)

क) दिइएको नाट्यांश पढी सोधिएका प्रश्नहरूको छोटो उत्तर लेख्नुहोस् :

ठिक भन्नुभो बाबा । सन्तानको सुख र शिक्षाका लागि भन्दै म रातदिन खटिएँ तर मैले मेरो छोरालाई समय दिइँनँ । ऊसँग बसेर उसको पढाइका बारेमा कुरा गरिँनँ । उसका साथी को को छन् भनेर कहिल्यै सोधखोज गरिँनँ । ऊ कहाँ गयो, के गर्‍यो, के खायो भनेर ख्याल गरिँनँ । म त खालि मेरो व्यवसाय, बैठक आदि भन्दै दौडधुप गरिरहेँ । उसले मागे जति पैसा दिइरहेँ तर ऊ त धेरै पहिलेदेखि दुर्व्यसनको सिकार भइसकेको रहेछ र आज मैले यो दिन भोग्नुपऱ्यो ।

प्रश्नहरू

(अ) यस नाट्यांशमा वक्तृले आफ्ना के कस्ता कमजोरी रहेको स्विकारेका छन् ?

(आ) यस नाट्यांशमा व्यक्त समस्या कसरी समाधान गर्न सकिएला ?

ख) दिइएका जीवनीको अंश पढी सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस् :

सन्ध्यासी जीवन सुरु गरेसँगै योगमायामा सामाजिक चेतना सलबलायो । उनी धार्मिक, सामाजिक प्रशासनिक, आर्थिक तथा राजनीतिक क्षेत्रमा विद्यमान सबै खाले विकृतिहरूका बारेमा खुलेर विरोध गर्न थालिन् । उनी छुवाछुतलाई मानव सभ्यताको सबैभन्दा ठुलो कलङ्क ठान्थिन् । त्यसैले कुनै पनि सामाजिक कार्यमा मानिसहरूलाई छुत र अछुत तथा माथिल्लो जात र तल्लो जातमा छुट्याउनु घोर अपराध मान्थिन् । सनातनी परम्पराको नाममा जातका आधारमा फरक फरक कानून प्रचलनमा रहेको त्यस समयको समाजमा छुवाछुत र जातपात नमान्नु घोर आपत्तिको विषय हुन्थ्यो । त्यस्ता व्यक्तिहरू विभिन्न दण्डका भागी हुन्थे । त्यस्तो कठोर राणाकालीन समयमा पनि उनले छुवाछुत तथा वर्णाश्रमको खुलेर विरोध गरिन् । पूजा, आराधना, भजन, कीर्तन प्रसाद वितरण र ग्रहणमा तिनीहरूलाई सहभागी गराएर उनले आफ्नो धारणालाई व्यवहारमा पनि उतारिन् । उनका थुप्रै भक्तहरू कथित दलित पनि थिए र उनीहरू सबै जना विनाभेदभाव सबै गतिविधिमा संलग्न हुन सक्थे । उनको आश्रममा प्रचलित यस किसिमको छुवाछुतरहित वातावरण देखेर कथित सनातनीहरू योगमायाको खुब आलोचना गर्थे ।

प्रश्नहरू

(अ) योगमायाको धर्मसम्बन्धी मान्यता कस्तो रहेको थियो ?

(आ) पाठसमेतका आधारमा योगमायाले गरेका सुधारका प्रयासहरूको वर्णन गर्नुहोस् ।

ग) दिइएको कथांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

खोलो अचेल फेरि गाउँतिर सोभिएको रहेछ । यो खोलाले पनि गाउँलाई धुरुकै रुवायो । हुन त रुवायो मात्रै भन्नु खोलाप्रति अन्याय ठहर्ला । यो खोलाले गाउँलाई पालेको पनि छ । हाम्रो विगतको लगभग आधा उमेर यही खोलाको डिल र बगरहरूमा बितेको थियो । कहिले ओराहा खाने निहुँमा त कहिले गाईभैसी चराउने निहुँमा । खोलामा बाढी आएको बेला हामी गाईको पुच्छर समाएर बाढी तर्ने गर्थ्यौँ अथवा यस्तो बेलामा हामी खोलाको किनारमा बसेर बाढीको आनन्द लुट्थ्यौँ । तर्न डराउने कोही मानिस आए भने हामी तीनचार जना एकअर्काको हात समाउँदै बाढीमा हेलिन्थ्यौँ र किनारमा पखिरहेको मानिसलाई तारिदिन्थ्यौँ र यस्तो काममा खास गरी परिछनकै विशेष रुचि थियो । “यहीँनिर कुवा छ, गए सालको वर्षामा मूल फुटेको एकदम चिसो र मिठो पानी छ ।” ऊ पानी लिएर आइसकेको थियो ।

प्रश्नहरू

अ. खोलाले रुवायो भन्ने कुरा मात्र गर्दा कसरी अन्याय हुन्छ ?

आ. ‘म’ पात्रका खोलासँगका बालअनुभूति कस्ता छन् ?

१५. कुनै एक प्रश्नको उत्तर दिनुहोस् :

(क) नेपालको पर्यावरणले पर्यटनलाई कसरी सहयोग पुर्याएको छ ?

(ख) ‘वीर पुर्खा’ कवितामा वीर पुर्खाको गौरवगान कसरी गरिएको छ, समीक्षात्मक उत्तर लेख्नुहोस् ।

१६. दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्दसम्ममा नघटाई निबन्ध लेख्नुहोस् ।

क) विज्ञान वरदान कि अभिशाप

ख) युवा र देशविकास

ग) मेरो जीवनको लक्ष्य

एन.ई.बी.परीक्षा - २०८१

समय: ३ घण्टा

पूर्णाङ्क : ७५

उत्तीर्णाङ्क : २७

विद्यार्थीहरूले सकेसम्म आफ्नै शब्दमा उत्तर दिनुपर्नेछ । दायाँ किनारामा दिइएको अङ्कले पूर्णाङ्क जनाउँदछ ।

सबै प्रश्नहरूको उत्तर दिनुहोस् :

१. तल रेखाङ्कित वर्णहरूलाई उच्चारण प्रयत्न र घोषत्वका आधारमा छुट्ट्याउनुहोस् :

यो खोलाले पनि गाउँलाई धुरुकै रुवायो । हुन त रुवायो मात्रै भन्नु खोलाप्रति अन्याय ठहर्ला ।

२. शुद्ध गरी पुनर्लेखन गर्नुहोस् :

आमाले भन्नुभयो, बाबु ऋनको आहालमा डुबीयो नी । त्यसले पनि सुन्दर लाई डीप्रेसनजस्तै भएको हो ।

३. अनुच्छेदमा रेखाङ्कन गरिएका शब्दको पदवर्ग पहिचान गरी लेख्नुहोस् :

ओहो ! तिमी त निकै बाठा मान्छे रहेछौ । कहिलेकाहीँ बाठाले तीन बल्ड्याइ खान्छन् नि ।

४. दिइएका प्रश्नको उत्तर दिनुहोस् :

(२ + २ = ४)

(क) दिएका अनुच्छेदबाट दुई दुईओटा तत्सम र आगन्तुक शब्द पहिचान गरी लेख्नुहोस् :

मान्छे, प्रकृति र वातावरणविचको सम्बन्ध र सन्तुलनलाई लिएर आजभोलि इकोफ्रेन्डली, इकोटुरिजम, इकोटोरोरिजम आदि इको उपसर्ग जोडिएका थुप्रै लवजहरू प्रयोग हुन थालेका छन् ।

(ख) दिइएका शब्दहरूलाई शब्दकोशीय क्रममा मिलाई लेख्नुहोस् :

प्रलाप, प्रहार, प्रसङ्ग, प्रकाश

५. दिइएका कुनै एक प्रश्नको उत्तर दिनुहोस् :

(क) दिइएको अनुच्छेदबाट तीनओटा पारिभाषिक शब्द पहिचान गरी वाक्यमा प्रयोग गर्नुहोस् :

सङ्क्रामक जीवाणु फैलाउने कोभिड १९ देखि ओमिक्रोनसमेतको माहामारीमा चिकित्सकहरूले महत्त्वपूर्ण भूमिका निर्वाह गरेका थिए । त्यस्तो समयमा पनि गम्भीर रोगीहरूको शल्यक्रिया सफलतापूर्वक गरेका थिए ।

(ख) दिइएको अनुच्छेदमा एउटा उखान, एउटा टुक्का र एउटा अनुकरणात्मक शब्द पहिचान गरी तिनलाई वाक्यमा प्रयोग गर्नुहोस् :

कामकुरो एकातिर कुम्तो बोकी ठिमीतिर भनेभै नेताहरू देशको जड समस्याप्रति आँखा चिम्लेर विदेशमा सयर गर्न उद्यत हुँदा भनक्क रिस उठ्छ । जति सरकार फेरिए पनि त्यो त जनताका लागि जति जोगी आए पनि कानै चिरेको जस्तो भएको

छ। जनता जति कराए पनि सरकारले कानमा तेल हालेर बसेपछि कसको के लाग्छ ? देशको यस्तो अवस्था देख्दा तरक्क आँसु भर्छ।

६. कुनै दुई प्रश्नको उत्तर दिनुहोस्।

(२ + २ = ४)

(क) तलका उपसर्ग र प्रत्यय प्रयोग गरी एक एक शब्द बनाउनुहोस् :

उपसर्ग : सम्, अधि, बद्

प्रत्यय : अक्कड, इक, ईय

(ख) तलको अनुच्छेदबाट दुईओटा समस्त शब्द पहिचान गरी विग्रह गर्नुहोस् अनि दुईओटा द्वित्व शब्द पहिचान गरी दोहोरिएको अंश छुट्ट्याउनुहोस् :

हनुमान जयन्तीको अवसर पारेर टोलटोलमा हनुमानपूजनको आयोजना गरियो। रामलीला देखाउन भव्य कार्यक्रमको आयोजनासमेत गरिएको थियो। एकाबिहानै मुखसुख धोएर घरघरै स्थापना गरिएका अष्टसिद्धि र नवनिधिका दाता श्री हनुमानका मूर्तिहरूलाई ढोग्दै कार्यक्रमस्थलमा पुगें। जुत्तासुत्ता खोलखाल पारेर अग्रस्थानमा विराजमान भएँ।

(ग) तलका अनुच्छेदबाट चारओटा सन्धियुक्त शब्द पहिचान गरी तिनको सन्धि विच्छेद गर्नुहोस् :

हाम्रो विद्यालयको पुस्तकालय कक्षको पूर्वोत्तर दिशाबाट हिमालको मनोरम दृश्यको दृश्यावलोकन गर्न सकिन्छ। भन् सूर्योदयको सुनौलो आभामा हिमाच्छादित हिमशृङ्खलाहरू आभामय बनेको दिव्य दृश्यले त अवाक् नै बनाउँछ।

७. दिइएका प्रश्नको उत्तर दिनुहोस् :

(२ + २ = ४)

(क) तलको अनुच्छेदका वाक्यहरूलाई स्त्रीलिङ्ग भए पुलिङ्ग र पुलिङ्ग भए स्त्रीलिङ्गमा परिवर्तन गर्नुहोस् :

ऊ विगत दश वर्षदेखि विदेशमा नै बस्दै आएको छ। उसले त्यहाँ राम्रो आमदानी हुने काम पाएको छ। उसकी बहिनी पनि विदेशमै बस्छे। ऊ त्यहाँ विधावारिधी गर्दै छे।

(ख) तलको अनुच्छेदका वाक्यहरूलाई एक वचन भए बहु वचनमा र बहु वचन भए एक वचनमा परिवर्तन गर्नुहोस् :

मेरा साथीहरू कलेज पढ्न सहर गए। म चाहिँ गाउँको मायाले यहीं पढ्न थालें। उनीहरू सहरमा धुवाँधुलो खाएर बसेका छन्। म गाउँको स्वच्छ वातावरणमा रमाइरहेको छु।

८. दिइएका प्रश्नको उत्तर दिनुहोस् :

(२ + २ = ४)

(क) तल दिइएको अनुच्छेदबाट दुई दुईओटा उद्देश्य, विधेय र उद्देश्य विस्तार र विधेय विस्तार पहिचान गर्नुहोस् :

मेरी साथीकी सानी बहिनी डोल्मा ६ महिना हिउँले ढाक्ने उच्च पहाडी गाउँमा बस्छे। हिउँले पुरिएको बाटो छिचोल्न नडराउने ऊ प्रत्येक दिन टाढाको विद्यालय पुग्छे। हिमाली जडी खोज्न आउनेहरूको मार्गदर्शक बन्छे। याक र चौरी चराउँदै ऊ साथीहरूसँग कुना कन्दरा चहाउँछे।

अथवा

तल दिइएका अनुच्छेदलाई सङ्गति मिलाई लेख्नुहोस् :

बहिनी साथी भेट्न गएको थियो। साँझ भ्रमक पर्दासम्म पनि नआएकोले आमा चिन्तित भयो। आमालाई चिन्तित देखेर म बहिनी खोज्न निस्कनुभयो। म निस्कदा ननिस्कदै बहिनी आइपुग्यो।

(ख) तलको अनुच्छेदमा भएका वाक्यहरूलाई करण भए अकरण र अकरण भए करणमा परिवर्तन गर्नुहोस् :

ऊ राष्ट्रभक्त नागरिक होइन। उसमा विदेशप्रतिको अत्याधिक मोह पाइन्छ। देशको मायाले उसलाई कहिल्यै तान्दैन। देश बनाउने कार्यमा ऊ जुट्ला त ?

अथवा

तलका वाक्यहरूको कथन परिवर्तन गर्नुहोस् :

विद्यार्थीले भने, “गुरुआमा ! राष्ट्रको उत्थान कसरी हुन्छ ?” गुरुआमाले भन्नुभयो, “भिना मसिना कुरा छोडेर सबै एकजुट भए राष्ट्र बन्छ।” विद्यार्थीले भने, “राजनीतिक नेताहरू नै फुटिरहेका छन्।” गुरुआमाले भन्नुभयो, “पहिले तिमीहरू नै मिलेर अगाडि बढ न।”

९. दुवै प्रश्नको उत्तर दिनुहोस् :

(४ + ४ = ८)

(क) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको छोटो उत्तर लेख्नुहोस् :

आधारभूत रूपमा अनुच्छेद दुई किसिमका हुन्छन् - आत्मपरक अनुच्छेद र वस्तुपरक अनुच्छेद। यसलाई प्रस्तुति वा शैलीका आधारमा गरिने वर्गीकरण पनि मानिन्छ। आत्मपरक अनुच्छेदमा लेखकको विचार वा अनुभूतिलाई प्राथमिकता दिइन्छ। यसमा लेखकले कुनै वस्तु, घटना वा भावमाथिका आफ्ना निजी विचारहरू राख्दछ। लेखकले राखेका यस्ता विचारहरूमाथि पाठक सहमत हुन पनि सक्छ र नहुन पनि सक्छ। यस किसिमको अनुच्छेदको दृष्टिबिन्दु प्रायजसो प्रथम

पुरुषात्मक हुन्छ । वस्तुपरक अनुच्छेदमा लेखकले तथ्यहरूमाथि बढी जोड दिएको हुन्छ । वस्तु, घटना वा भावको अनुच्छेद तयार पार्ने सिलसिलामा लेखक सामान्य सत्यहरूमाथि निर्भर रहनु तथ्यमाथि जोड दिनु हो । यस्ता तथ्यहरू प्रायशः सबैका लागि स्वीकार्य हुन्छ । यस किसिमको अनुच्छेदको दृष्टिबिन्दु मूलतः तृतीय पुरुषात्मक हुन्छ ।

प्रश्नहरू

- क) आधारभूत रूपमा अनुच्छेद कति किसिमका हुन्छन् ?
 ख) कस्तो अनुच्छेदलाई आत्मपरक अनुच्छेद भनिन्छ ?
 ग) अनुच्छेदमा वस्तुपरक विषयलाई कसरी वर्णन गरिएको हुन्छ ?
 घ) आत्मपरक अनुच्छेद र वस्तुपरक अनुच्छेदबिचको मुख्य अन्तर के हो ?

(ख) दिइएको अनुच्छेद पढी सोधिएका प्रश्नको उत्तर लेख्नुहोस् :

सूचना प्रविधिले शिक्षा, स्वास्थ्य, रोजगारी, व्यापार व्यवसाय जस्ता क्षेत्रमा सजिलो गरेको छ । बसी बसी आफ्नो मनले चाहेको चिजबीच प्राप्त गर्न सकिन्छ, प्रविधिका माध्यमबाट हामीले चाहेको वस्तु घरमै मगाउन सक्छौं । अनलाइनका माध्यमबाट विभिन्न सामान तुरुन्तै हाम्रो हातमा आइपुग्छन् । इन्टरनेटमा किनमेल गर्न क्रेडिट कार्ड पनि उत्तिकै उपयोगी माध्यम बनेको छ । यस नयाँ युगमा इ-कमर्स, इ-मेडिसियन, इ-एजुकेसन, इ-गभर्नेन्स, इ-बैंकिङ, इ-सपिङ आदि इन्टरनेटका माध्यमबाट गरिने अत्याधुनिक काम हुन् । यस्ता गतिविधिले मानव जीवनलाई सहज पारिदिएको छ । हाम्रा सबै धर्म, संस्कृति, चाडपर्वदेखि खानपिन, रहनसहन आदि पनि सूचना प्रविधिसँग जोडिएका छन् । जुन समाजमा सूचना प्रविधिको जति धेरै प्रचार प्रसार भएको छ, त्यस क्षेत्रमा त्यति नै धेरै विकास भएको छ । त्यसैले आज बेलायत, अमेरिका, फ्रान्स, जर्मनीजस्ता देश संसारका सबभन्दा विकसित देश मानिएका छन् । कम्प्युटरबाट चल्ने रोबोटका माध्यमबाट आज विश्वमा मान्छेले आफ्नो कामलाई सजिलो बनाइरहेका छन् । युद्ध मैदानमा पनि कम्प्युटरको सहायताले मिसाइल, मानवविनाका लडाकु विमान आदि प्रयोग भइरहेका छन् । यो पनि कम्प्युटरकै देन हो । घर, गाडी, हवाईजहाज आदिको डिजाइन तयार गर्नमा पनि कम्प्युटरको प्रयोग गरिन्छ । अन्तरिक्ष विज्ञानका क्षेत्रमा त कम्प्युटरले चमत्कार नै गरेको छ । यसका माध्यमबाट अन्तरिक्षमा रहेका ग्रह, नक्षत्रका चित्र लिइरहेका छन् ।

प्रश्नहरू

- (क) 'प्रविधि' शब्दको अर्थ के हो ?
 (अ) इन्टरनेटको प्रयोग (आ) विज्ञान (इ) वैज्ञानिक ढङ्गले काम गर्ने सिप (ई) कम्प्युटर
- (ख) किन बेलायत, अमेरिका, फ्रान्स, जर्मनीजस्ता देश संसारका सबभन्दा विकसित देश मानिएका छन् ?
 (अ) सूचना र प्रविधिको प्रयोगले (आ) विभिन्न सामान तुरुन्तै हाम्रो हातमा आइपुग्ने हुनाले (इ) लडाकु विमान प्रयोग गरेकोले (ई) किनमेल गर्न क्रेडिट कार्ड प्रयोग गर्नाले
- (ग) मानिसले केका माध्यमबाट अन्तरिक्षमा रहेका ग्रह, नक्षत्रका चित्र लिइरहेका छन् ?
 (अ) इ-एजुकेसन (आ) मानवविनाका लडाकु विमान (इ) इ-गभर्नेन्स (ई) कम्प्युटर
- (घ) 'आज बेलायत, अमेरिका, फ्रान्स, जर्मनीजस्ता देश संसारका सबभन्दा विकसित देश मानिएका छन्' भन्ने वाक्यमा 'आज' कस्तो शब्द हो ?
 (अ) नाम (आ) सर्वनाम (इ) क्रियायोगी (ई) विशेषण

१०. तलको अनुच्छेदबाट चारओटा बुँदा टिपी एक तृतीयांशमा सारांश लेख्नुहोस् : ४

आजको विश्वमा मानव जातिका लागि मानव अधिकार भन्ने कुरा अपरिहार्य विषय बन्न पुगेको छ । मानव अधिकारको अभावमा मान्छेको वैयक्तिक विकास सम्भव छैन । जब एउटा नागरिक आफ्ना अधिकारहरूबाट वञ्चित रहन्छ, तब त्यसको असर समाज र राष्ट्रले समेत भोग्नुपर्ने हुन्छ । मानव अधिकार कुनै एउटा व्यक्ति वा राज्यको मात्र सरोकारको कुरा होइन । यसको सम्मानमा संसारका हरेक व्यक्ति, समाज, राज्य एवम् अन्तराष्ट्रकै सहयोग आवश्यक हुन्छ, तापनि आफ्नो मुलुकमा मानव अधिकारलाई सम्मान गर्ने परिपाटी कायम गर्ने कि नगर्ने भन्ने विषय भने त्यस मुलुकको राज्य व्यवस्था वा सरकारमै निर्भर गर्दछ । यस अर्थमा मानव अधिकारको सम्मान गर्न र त्यसलाई सुदृढ पार्न सरकारको नै सबैभन्दा महत्त्वपूर्ण भूमिका रहनु स्वाभाविक हो ।

११. कुनै एक प्रश्नको उत्तर दिनुहोस् : ४

- क) हालसालै बजारमा आएको स्वदेशमै उत्पादित 'इलामे हर्बल चियापत्ति' को प्रचार प्रसारका लागि इलामे चिया कम्पनी, पशुपतिनगर इलामको तर्फबाट गरिने विज्ञापनको नमुना तयार पार्नुहोस् ।
 ख) २०८१ सालको नव वर्षको उपलक्ष्यमा आफ्ना आफन्त तथा मित्रगणलाई शुभकामना दिन बनाइने शुभकामना पत्रको नमुना तयार पार्नुहोस् ।

१२. कुनै एक प्रश्नको उत्तर लेख्नुहोस् : ४

क) आफ्नो विद्यालयले आयोजना गरेको रक्तदान कार्यक्रमका प्रमुख गतिविधिहरूलाई समेटेर १५० शब्दसम्मको प्रतिवेदन लेख्नुहोस् । (मानौं तपाईंको विद्यालयको नाम सरस्वती निकेतन मा.वि. हो र तपाईंको नाम सोनाम हो ।)

ख) 'वैदेशिक रोजगारतर्फको बढ्दो आकर्षण; समस्या र समाधान' शीर्षकमा १५० शब्दसम्मको टिप्पणी लेख्नुहोस् ।

१३. सन्तानलाई सम्पत्ति होइन सुसंस्कार दिन सके उसको भविष्य निर्माण हुन्छ भन्ने विषयमा १२५ शब्दसम्ममा आफ्नो प्रतिक्रिया लेख्नुहोस् । ४

१४. कुनै दुई प्रश्नको उत्तर लेख्नुहोस् :

(४ + ४ = ८)

क) दिइएको कथांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

"त्यहीँ कुराको खुसी छु, हिम्मत त किन हारिन्थ्यो र ! अरे, एक साल भएन त अर्को साल कहाँ जाला ! जब उतर गए रण पे तो पिछ्छे हटना क्यो ? तर एउटा कुराको दुःख छ भाइ ! यस्तो बेलामा, किसुन भाइ ! तिमी पनि गाउँमा हुँदा हो त हामीलाई धेरै आडभरोस मिल्थ्यो, बल मिल्थ्यो; आखिर हामी त मूर्ख र गँवार न हौं । तिमी लेखपढ गरेको मान्छे । तिमी भन्या गाउँको अभिमान हौं, हाम्रो इज्जत हो । तर तिमी पनि परदेशी भइदिँदा गाउँ मालिकहरूको एकलौटी रजाईमा पर्छ.....।"

प्रश्नहरू

(अ) कृष्णलाई सबैले किन सम्मान गरेका हुन् ?

(आ) पढेलेखेका मान्छेले गाउँ छोड्यो भने गाउँमा कस्तो असर पर्छ ?

ख) दिइएको कवितांश पढी सोधिएका प्रश्नहरूको उत्तर दिनुहोस् :

कुन पहाडले कुन खोलाले तिम्रो गति छेकेथ्यो र
वीर पुर्खा ! कुन आँधीले तिम्रो यात्रा रोकेथ्यो र
गरुडको भैँ वेग तिम्रो कुन आकाशले बाँध्न सक्यो
पौरखले रच्यो नेपाल ! पहाड तराई जुट्न सक्यो ।

प्रश्नहरू

अ. नेपालीहरूको कस्तो पौरखले नेपालको रचना भएको हो ?

आ. कवितांशका आधारमा हाम्रा वीर पुर्खाको गौरव गाथाको वर्णन गर्नुहोस् ।

ग) दिइएको निबन्धांश पढी सोधिएका प्रश्नको उत्तर दिनुहोस् :

विहङ्गम दृष्टिले विचार गर्दा सम्पूर्ण पृथ्वी एउटा घर हो, गृह हो । यहाँ जल, स्थल, वायु, आकाश र तेज (प्रकाश) यी पाँच तत्त्व (पञ्चतत्त्व) का बिच जलचर, स्थलचर, नभचर र सबै चराचर आफ्नो जीवन बिताउँदछन् । पृथ्वीलाई छोडेर अन्य ग्रहमा जीवात्माको अस्तित्व भेटिएको छैन । त्यसैले हामी सबैले यहीँ बाँच्नुपर्छ, यहीँ मर्नुपर्छ । यो सिवाय अरु जाने ठाउँ छैन । पृथ्वीको पारिस्थितिक प्रणालीलाई बिथोलिएदियो भने हाम्रै अस्तित्व सड्कटमा पर्छ । हालका दिनमा जलवायु परिवर्तनका विषयमा विशेष गरेर वायुमण्डल प्रदूषणका कारण पृथ्वी सतह अप्रत्यासित ढङ्गले तात्ने क्रमलाई लिएर विशेष चिन्ता र चासो हाम्रो सामु तेर्सिएको छ ।

प्रश्नहरू

(अ) पृथ्वी नै सबैको साभा घर हो, कसरी ?

(आ) वायुमण्डल प्रदूषणका कारण पृथ्वीको सतह अप्रत्यासित ढङ्गले तात्ने क्रमलाई लिएर किन चासो र चिन्ता बढेको छ ?

१५. कुनै एक प्रश्नको उत्तर दिनुहोस् :

८

(क) नेपालमा विद्यमान संस्कृतिका सबल र दुर्बल पक्षको चर्चा गर्नुहोस् ।

(ख) 'लौ आयो ताजा खबर' लघुनाटकमा व्यक्त मुख्य सन्देशमाथि प्रकाश पार्नुहोस् ।

१६. दिइएका शीर्षकमध्ये एक शीर्षकमा २५० शब्द नघटाई निबन्ध लेख्नुहोस् :

८

क) अधिकार र कर्तव्य

ख) नेपालको जलस्रोत

ग) मेरो देश : मेरो गौरव

First Term Examination – I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M. : 30

Set: A

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11 × 1 = 11]

1. If a, b, c are in A.P. then
 - a. $b^2=ac$
 - b. $b^2<ac$
 - c. $b^2>ac$
 - d. None
2. If a, b, c are in G.S. and $k(\neq 0)$ is a constant, then which one is not in G.S.?
 - a. $k+a, k+b, k+c$
 - b. ka, kb, kc
 - c. $a/k, b/k, c/k$
 - d. a^k, b^k, c^k
3. If A is a matrix such that $A + 0 = 0 + A = A$, then 0 is called the
 - a. additive inverse
 - b. additive identity
 - c. unit matrix
 - d. multiplicative identity
4. The value of $\begin{vmatrix} x & 1 & x+y \\ y & 1 & z+x \\ z & 1 & x+y \end{vmatrix}$ is
 - a. 0
 - b. 1
 - c. $x + y + z$
 - d. $1 + x + y + z$
5. The unit vector along the direction of $\vec{a} = 2\vec{i} + 2\vec{j} - \vec{k}$ is
 - a. $\frac{1}{9}(2\vec{i} + 2\vec{j} - \vec{k})$
 - b. $\frac{1}{3}(2\vec{i} + 2\vec{j} - \vec{k})$
 - c. $\frac{1}{2\sqrt{2}}(2\vec{i} + 2\vec{j} - \vec{k})$
 - d. $\frac{1}{5}(2\vec{i} + 2\vec{j} - \vec{k})$
6. The range of the function $y = 2 \cos^{-1}x$ is
 - a. $0 \leq y \leq \pi$
 - b. $0 \leq y \leq \frac{\pi}{2}$
 - c. $-\pi \leq y \leq \pi$
 - d. $0 \leq y \leq 2\pi$
7. The solution of the equation $\sin\theta = \sin\alpha$ is
 - a. $\theta = n\pi + \alpha$
 - b. $\theta = n\pi + (-1)^n\alpha$
 - c. $\theta = 2n\pi \pm \alpha$
 - d. $\theta = 2\pi$
8. $\lim_{x \rightarrow a} f(x)$ exists if
 - a. $\lim_{x \rightarrow a} f(x) = l \neq \infty$
 - b. $\lim_{x \rightarrow a^-} f(x) = \lim_{x \rightarrow a^+} f(x)$
 - c. both of a and b
 - d. $\lim_{x \rightarrow a} f(x) = \infty$
9. The value of $\lim_{x \rightarrow \infty} x \sin \frac{1}{x}$ is equal to
 - a. 1
 - b. -1
 - c. 0
 - d. ∞
10. Let f and g be continuous function at $x = a$ then which of the following is correct?
 - a. f and g is continuous function at $x=a$
 - b. $f-g$ is continuous at $x = a$
 - c. $f.g$ is continuous at $x = a$
 - d. all of them
11. The derivate of $f(x) = \frac{1}{x} + x$ is
 - a. 1
 - b. $\frac{1}{x^2} + 1$
 - c. $1 - \frac{1}{x^2}$
 - d. x^2+1

Group 'B'

[8 × 5 = 40]

12. a. Find the sum to infinity of the G.P. $-5/4, 5/16, -5/64, \dots$ (2)
- b. If A,G,H are arithmetic mean, geometric mean and harmonic mean between two unequal positive number a and b, then prove that $A>G>H$. What happens if $a=b$? (2+1)

13. a. If $A = \begin{pmatrix} 0 & 2k-3 \\ 1-k & 0 \end{pmatrix}$ and $A = -A^T$, find the value of k ? (2)

b. Without expanding prove that (3)

$$\begin{vmatrix} 1 & x & x^2 \\ 1 & y & y^2 \\ 1 & z & z^2 \end{vmatrix} = \begin{vmatrix} 1 & x & yz \\ 1 & y & zx \\ 1 & z & xy \end{vmatrix}.$$

14. a. If the matrix $A = \begin{pmatrix} 6 & k-1 \\ 2 & -5 \end{pmatrix}$ does not have its inverse, then find the value of k . (3)

b. Sketch the graph of $\sin^{-1}x$. (2)

15. a. Express $\sin^{-1}x$ in terms of $\tan^{-1}x$. (2)

b. Find the general solution of: (3)

$$\tan\left(\frac{\pi}{4} + \theta\right) + \tan\left(\frac{\pi}{4} - \theta\right) = 4$$

16. a. If $\vec{a} = (3, 1, -1)$ and $\vec{b} = (\lambda, -4, 4)$; find the value of λ for which \vec{a} and \vec{b} are collinear. (2)

b. Show that the three vectors $\vec{a} - 2\vec{b} + 3\vec{c}$, $-2\vec{a} + 3\vec{b} - 4\vec{c}$ and $-\vec{b} + 2\vec{c}$ are coplanar. (3)

17. a. Show that two collinear vectors are linearly dependent. (2)

b. What do you mean by an indeterminate form? Mention any three indeterminate forms with examples. (3)

18. a. Evaluate: $\lim_{x \rightarrow 0} \frac{\sqrt{1+x} - 1}{x}$ (2)

b. Test the continuity or discontinuity of the function $f(x) = \frac{1}{x-2}$ at $x \neq 2$. (3)

19. a. Find the derivative of e^x . (2)

b. Find, from definition the derivative of $\frac{1}{x}$. (3)

Group 'C

[3 × 8 = 24]

20. a. Define transpose of a matrix. If $A = \begin{pmatrix} 2 & 4 & 3 \\ 2 & 3 & 4 \\ 5 & 2 & 6 \end{pmatrix}$, find A^T . (2)

b. Find the sum and difference of the above matrix A and its transpose and comment on the results. (2+1)

c. Show that:

$$\begin{vmatrix} 1 & a & bc \\ 1 & b & ca \\ 1 & c & ab \end{vmatrix} = (a-b)(b-c)(c-a).$$
 (3)

21. a. Prove that $\tan^{-1}a + \tan^{-1}b = \tan^{-1}\frac{a+b}{1-ab}$. (2)

b. Solve $2\cos^2x - 5\cos x + 2 = 0$ for $0 \leq x \leq 2\pi$. (3)

c. Express $\vec{r} = (-2, 16, 2)$ as the linear combination of $\vec{a} = (0, 3, 4)$, $\vec{b} = (0, 0, -2)$ and $\vec{c} = (1, -5, 0)$. (3)

22. a. What do you understand by the limit of a function? (1)

b. Let a function $f(x)$ be defined by

$$f(x) = \begin{cases} 2 - x^2 & \text{for } x < 2 \\ 3 & \text{for } x = 2 \\ x - 4 & \text{for } x > 2 \end{cases}$$

Verify that the limit of the function $f(x)$ exists at $x=2$. Is the function $f(x)$ continuous at $x=2$. If not why? State how can you make it continuous? (4)

c. Find $\frac{dy}{dx}$ for $x^3 + y^3 - 3axy = 0$ (3)

First Term Examination – II

Class: XI

Time: 3 hrs.

F. M.: 75

P.M. : 30

Set: B

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11 × 1 = 11]

1. If $\frac{1}{a}, \frac{1}{b}, \frac{1}{c}$ are in A.P. then $\frac{b+c}{a}, \frac{c+a}{b}, \frac{a+b}{c}$ are in
 - a. A.P.
 - b. G.P.
 - c. H.P.
 - d. None
2. The formula $S_{\infty} = \frac{a}{1-r}$ holds when
 - a. $r > 1$
 - b. $r < 1$
 - c. $-1 \leq r \leq 1$
 - d. $-1 < r < 1$
3. If the matrix $A = \begin{pmatrix} 6 & k-1 \\ 2 & -5 \end{pmatrix}$ does not have its inverse, then the value of k is
 - a. 14
 - b. -14
 - c. 12
 - d. -12
4. The value of the determinant $\begin{vmatrix} a & 0 & 0 \\ 0 & b & 0 \\ 0 & 0 & c \end{vmatrix}^2$ is
 - a. abc
 - b. 0
 - c. $a^2 b^2 c^2$
 - d. -abc
5. The two vectors (3, -6) and (1, 4) are
 - a. linearly independent
 - b. linearly dependent
 - c. coplanar
 - d. None
6. The principal value of $\sin^{-1}\left(\frac{-1}{\sqrt{2}}\right)$
 - a. $\frac{\pi}{4}$
 - b. $-\frac{\pi}{4}$
 - c. $\frac{3\pi}{4}$
 - d. $\frac{3\pi}{2}$
7. The equation $\sin x = k$ has a solution if
 - a. $|k| \leq 1$
 - b. $|k| \geq 1$
 - c. $-\infty < k < \infty$
 - d. $-2 \leq k \leq 2$
8. The value of $\frac{|x|}{x}$ is
 - a. 1
 - b. -1
 - c. does not exist
 - d. $\frac{0}{0}$
9. The value of $\lim_{x \rightarrow \infty} \frac{\sin x}{x}$ is equal to
 - a. ∞
 - b. -1
 - c. 1
 - d. 0
10. The function $y = f(x)$ is discontinuous at $x = a$ due to $\lim_{x \rightarrow a} f(x) \neq \lim_{x \rightarrow a} f(x) = f(a)$, then the discontinuity is called
 - a. jump
 - b. removable
 - c. infinite
 - d. all of them
11. The derivative of $f(x) = (3-x)^5$ is
 - a. $5(3-x)^4$
 - b. $15(3-x)^4$
 - c. $-5(3-x)^4$
 - d. $5(3-x)^5$

Group 'B'

[8 × 5 = 40]

12. a. Show that if three quantities a,b,c form any two of the three sequences A.S., G.S. and H.S., then they also form the remaining third sequence. (2)
 - b. Find the sum of the series: (3)

$$\frac{1}{2} + \frac{4}{2^2} + \frac{7}{2^3} + \frac{10}{2^4} + \dots$$

13. a. Prove that the two matrices $\begin{pmatrix} -3 & -2 \\ 5 & 3 \end{pmatrix}$ and $\begin{pmatrix} 3 & 2 \\ -5 & -3 \end{pmatrix}$ are the inverse of each other. (3)

b. Show that (3)

$$\begin{vmatrix} a-b-c & 2a & 2a \\ 2b & b-c-a & 2b \\ 2c & 2c & c-a-b \end{vmatrix} = (a+b+c)^3$$

14. a. Give an example of symmetric matrix. Justify your answer. (2)

b. For a given numerical value of x, show that $\sin^{-1}x + \cos^{-1}x = \frac{\pi}{2}$. (3)

15. a. Define inverse sine function. Evaluate $\sin^{-1}\left(-\frac{1}{2}\right)$ without using table. (2)

b. Solve: $\sin x + \cos x = \sqrt{2}$ ($-2\pi \leq x \leq 2\pi$) (3)

16. a. Show that the points $\vec{i} - 2\vec{j} + 3\vec{k}$, $2\vec{i} + 3\vec{j} - 4\vec{k}$ and $-7\vec{j} + 10\vec{k}$ are collinear. (2)

b. Examine whether the following vectors are linearly dependent or independent $\vec{a} = (1, 0, 1)$, $\vec{b} = (1, 1, 0)$ and $\vec{c} = (-1, 0, 1)$. (3)

17. a. If the position vectors of A and B are $2\vec{i} + 5\vec{j} - 7\vec{k}$ and $5\vec{i} + 5\vec{j} - 10\vec{k}$, then write the direction cosines of \overline{AB} .

b. Show that: $\lim_{x \rightarrow 0} \frac{\log(1+x)}{x} = 1$ (3)

18. a. If $f(x) = \begin{cases} kx - 2 & \text{for } x \geq 1 \\ 3x + 1 & \text{for } x < 1 \end{cases}$ is continuous at $x=1$, then find the value of k. (2)

b. Evaluate: $\dots (\sqrt{x} - \sqrt{x-a})$ (3)

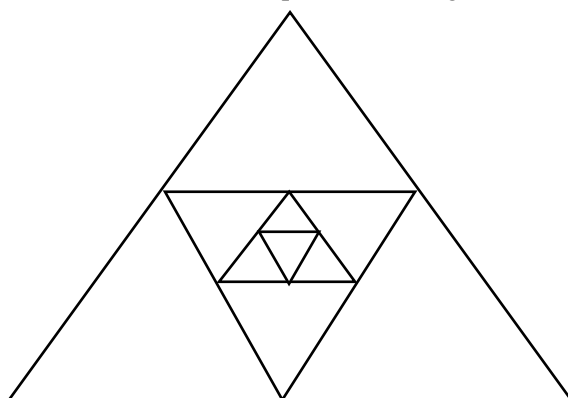
19. a. Find $\frac{dy}{dx}$ if $y = \frac{t-1}{2t}$ and $t = e^x$. (2)

b. Find, from definition, the derivative of $(2x + 3)^{1/2}$. (3)

Group 'C'

[3 × 8 = 24]

20. a. A side of an equilateral triangle is 8 cm long. A second equilateral triangle is inscribed in it by joining the mid points of the side of the first triangle. The process is continued as shown in the given figure. Find the perimeter of the fourth inscribed equilateral triangle. (3)



b. Use Sarrus rule to find the value of the determinant $\begin{vmatrix} 2 & 3 & 5 \\ 3 & 0 & 4 \\ 4 & 6 & 8 \end{vmatrix}$. (3)

c. Give an example of two matrices P and Q such that $PQ=0$ when neither $P=0$ nor $Q=0$. (2)

21. a. Find the solution of the equations (general solution not required) $\tan x + \tan y = 2$ and $2\cos x \cos y = 1$. (3)

b. Find the value of λ so that the vectors $4\vec{i} + 5\vec{j} + \vec{k}$, $5\vec{i} + \lambda\vec{j} + 4\vec{k}$ and $-\vec{j} - \vec{k}$ are coplanar. (3)

- c. Prove that: $3 \tan^{-1}x = \tan^{-1} \frac{3x - x^3}{1 - 3x^2}$. (2)
22. a. Evaluate: $\lim_{x \rightarrow \theta} \frac{x \cos \theta - \theta \cos x}{x - \theta}$. (3)
- b. Find $\frac{dy}{dx}$ of $x^3y^6 = (x+y)^9$ (3)
- c. Differentiate $(5x-1)^6$ w.r.t. $(x+1)^2$. (2)

Second Term Examination – I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M. : 30

Set: A

Group 'A'

Rewrite the correct option in your answer sheet.

[11 × 1 = 11]

1. If $\frac{x-y}{y-z} = \frac{x}{y}$ then x, y, z are in
 - a. A.P.
 - b. G.P.
 - c. H.P.
 - d. none
2. Two matrices A and B are inverse of each other if
 - a. $AB = I$
 - b. $BA = I$
 - c. $AB = BA$
 - d. $AB = BA = I$
3. Two vectors (3, -6) and (1, 4) are
 - a. linearly independent
 - b. linearly dependent
 - c. collinear
 - d. none
4. $\sin x = 1 \Rightarrow x =$
 - a. $n\pi - \frac{\pi}{2}$
 - b. $n\pi - \frac{\pi}{2}$
 - c. $(4x+1)\frac{\pi}{2}$
 - d. $(4x-1)\frac{\pi}{2}$
5. If $\sin^{-1}x = \cos^{-1}x$ then $x = \lim_{x \rightarrow \infty} \frac{\sqrt{x}}{x+2} =$
 - a. $\frac{\infty}{\infty}$
 - b. ∞
 - c. 0
 - d. 1
6. If the equation $2x^2 - kx + 8 = 0$ has two equal roots then
 - a. $k = \pm 2$
 - b. $k = \pm 4$
 - c. $k = \pm 8$
 - d. $k = \pm 1$
7. $\sqrt{-16} \cdot \sqrt{-9} =$
 - a. 12
 - b. -12
 - c. 12i
 - d. -12i
8. If $\sin^{-1}x = \cos^{-1}x$ then $x =$
 - a. $\frac{1}{\sqrt{2}}$
 - b. 0
 - c. 1
 - d. -1
9. The perpendicular distance between $4x - 3y = 12$ and $4x - 3y = 2$ is
 - a. $\frac{12}{5}$
 - b. $\frac{2}{5}$
 - c. 2
 - d. 10
10. If $f(x) = x^2 - 2x + 5$, $f'(x) =$
 - a. 5
 - b. 3
 - c. 1
 - d. 0
11. $\frac{d}{dx}(e^{kx}) =$
 - a. $k \cdot e^{kx}$
 - b. e^{kx}
 - c. $\frac{e^{kx}}{k}$
 - d. $k \cdot e^x$

Group 'B'**[8 × 5 = 40]**

12. a. If 'H' be the harmonic mean between 'a' and 'b', prove that $(H - 2a)(H - 2b) = H^2$. 2
 b. Find the sum of the infinite series $\frac{1}{5} + \frac{3}{5^2} + \frac{5}{5^3} + \frac{7}{5^4} + \dots$ 3
13. a. If $A = \begin{pmatrix} 4 & x+2 \\ 2x-1 & 0 \end{pmatrix}$ and $A = A^T$, find value of x. 2
 b. Show that: $\begin{vmatrix} a+x & b & c \\ a & b+y & c \\ a & b & b+z \end{vmatrix} = xyz \left(1 + \frac{a}{x} + \frac{b}{y} + \frac{c}{z} \right)$. 3
14. a. Show that vectors $(1, -2, 3)$, $(2, 3, -4)$ and $(0, -7, 10)$ are collinear. 2
 b. Show that the vectors $5\vec{a} + 6\vec{b} + 7\vec{c}$, $7\vec{a} - 8\vec{b} + 9\vec{c}$ and $3\vec{a} + 20\vec{b} + 5\vec{c}$ are coplanar where \vec{a} , \vec{b} , \vec{c} are any three vectors. 3
15. a. Evaluate: $\lim_{x \rightarrow \infty} (\sqrt{x+a} - \sqrt{x})$. 2
 b. Evaluate: $\lim_{x \rightarrow 0} \frac{a^x - b^x}{x}$. 3
16. a. Solve: $\tan ax = \cot bx$. 2
 b. Find the angle between line pair $2x^2 + 7xy + 3y^2 = 0$. 3
17. a. Simplify: $3\sqrt{-4} + 5\sqrt{-9} - 4\sqrt{-25} = 0$. 2
 b. If $x - iy = \frac{3 - 2i}{3 + 2i}$ prove that $x^2 + y^2 = 1$. 3
18. a. Prove that: $\tan^{-1}\left(\frac{1 + \cos x}{\sin x}\right) = \frac{\pi}{2} + \frac{x}{2}$. 2
 b. Solve: $\sin^{-1}\frac{2a}{1+a^2} + \sin^{-1}\frac{2b}{1+b^2} = 2\tan^{-1}x$. 3
19. a. Find derivative of $\sin x$ by definition. 3
 b. Find the derivative of e^{ax+b} . 2

Group 'C'**[3×8 = 24]**

20. a. Find the condition that the roots of the quadratic equation $ax^2 + bx + c = 0$ may be in the ratio $m : n$. 4
 b. Prove that the roots of $ax^2 + bx + c = 0$ be reciprocal of roots of $a^1x^2 + b^1x + c^1 = 0$ if $\frac{a}{a^1} = \frac{b}{b^1} = \frac{c}{c^1}$ 4
21. a. If p is the length of perpendicular dropped from origin to the line $\frac{x}{a} + \frac{y}{b} = 1$ then prove that $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{p^2}$ 2
 b. Find the equation of the bisector of the angles between the lines $7x - y + 11 = 0$ and $x + y - 15 = 0$ containing origin. Also prove that the bisectors of the angles are at right angles to each other. 4
 c. Show that two of the three points $(0, 0)$, $(2, 3)$ and $(3, 4)$ lie on one side and the remaining on the other side of the line $x - 3y + 3 = 0$. 2
22. a. Find derivative if $xy^2 = (x + 2y)^3$. 4
 b. Find $\frac{dy}{dx}$ if $x = \log t + \sin t$, $y = e^t + \cos t$. 4

Second Term Examination – II

Class: XI

Time: 3 hrs.

F. M.: 75

P.M. : 30

Set: B

Group 'A'

Rewrite the correct option in your answer sheet.

[11 × 1 = 11]

1. If x, y and z are in A.P. which of the following relations is true?
 - a. $x = \frac{y+z}{2}$
 - b. $y^2 > xz$
 - c. $y^2 = xz$
 - d. $y^2 < xz$
2. Two matrices A and B are inverse to each other if
 - a. $AB = I$
 - b. $BA = I$
 - c. $AB = BA$
 - d. $AB = BA = I$
3. A quadratic equation having two roots $\sqrt{3}$ and $-\sqrt{3}$ is given as
 - a. $x^2 - 3 = 0$
 - b. $x^2 + 3 = 0$
 - c. $x^2 - \sqrt{3} = 0$
 - d. $x^2 + \sqrt{3} = 0$
4. What is the value of i^{27} ?
 - a. 1
 - b. -1
 - c. I
 - d. -i
5. What is the value of $\sin^{-1}\left(\frac{-1}{2}\right)$
 - a. $\frac{\pi}{3}$
 - b. $\frac{\pi}{6}$
 - c. $-\frac{\pi}{6}$
 - d. $\frac{\pi}{2}$
6. Evaluate: $\lim_{x \rightarrow 2} \frac{\sin(x-2)}{x^2-4}$
 - a. $\frac{1}{4}$
 - b. $\frac{1}{2}$
 - c. 1
 - d. 0
7. Evaluate: $\sin\left(\cos^{-1}\frac{3}{5}\right)$
 - a. $\frac{4}{5}$
 - b. $\frac{3}{5}$
 - c. $\frac{3}{25}$
 - d. $\frac{4}{7}$
8. Two vectors \vec{a} and \vec{b} are orthogonal to each other if
 - a. $\vec{a} \cdot \vec{b} = 0$
 - b. $\vec{a} = \vec{b}$
 - c. $\vec{a} \times \vec{b} = 0$
 - d. $\vec{b} \times \vec{a} = 0$
9. The length of perpendicular from (0, 0) to the line $3x + y + 1 = 0$ is
 - a. $\frac{2}{5}$
 - b. $\frac{1}{\sqrt{10}}$
 - c. $\sqrt{10}$
 - d. $\frac{3}{\sqrt{5}}$
10. If $f(x) = x^3 + 4x^2 + 7x + 2$, what is the value of $f'(1)$
 - a. 0
 - b. 17
 - c. 23
 - d. 18
11. Find the derivative of $e^{\tan x}$
 - a. $e^{\tan x}$
 - b. $e^{\sec x}$
 - c. $e^{\tan x} \cdot \tan^2 x$
 - d. $e^{\tan x} \cdot \sec^2 x$

Group 'B'

[8 × 5 = 40]

12. a. If 'H' be the harmonic mean between 'a' and 'b', prove that $\frac{1}{H-a} + \frac{1}{H-b} = \frac{1}{a} + \frac{1}{b}$. 2
 - b. A side of an equilateral triangle is 8 cm. The middle points of its sides are joined to form second equilateral triangle whose middle points are again joined to form third equilateral triangle. If the process is continuous indefinitely, find the sum of perimeters of all the triangles. 3

13. a. If $A = \begin{pmatrix} 4 & 5 & 6 \\ 7 & 8 & -9 \\ 10 & 11 & 12 \end{pmatrix}$ be the given matrix then show that $A = A^T$ is a skew-symmetric matrix. 2
- b. Show that: $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ bc & ca & ab \end{vmatrix} = (a - b)(b - c)(c - a)$. 3
14. a. Prove that: $\frac{3+2i}{2-5i} + \frac{3-2i}{2+5i}$ is purely a real number. 2
- b. Find the square root of $12 + 5i$. 3
15. a. Express $\vec{r} = (4, 7)$ as the linear combination of $\vec{a} = (5, -4)$ and $\vec{b} = (-2, 5)$. 2
- b. A function $f(x)$ is defined as follows: $f(x) = \begin{cases} \frac{2x^2 - 18}{x - 3} & \text{for } x \neq 3 \\ k & \text{for } x = 3 \end{cases}$ find the value of k so that $f(x)$ is continuous at $x = 3$. 3
16. a. Show that the points $(1, -2, 3)$, $(2, 3, -4)$ and $(0, -7, 10)$ are collinear. 2
- b. Prove that the vectors $\vec{a} + 2\vec{b} + 3\vec{c}$, $-2\vec{a} + 3\vec{b} - 3\vec{c}$ and $-\vec{b} + 2\vec{c}$ are coplanar. 3
17. a. Prove that $x + y + z = xyz$ if $\tan^{-1}x + \tan^{-1}y + \tan^{-1}z = \pi$. 2
- b. Solve: $\sin x + \cos x = \sqrt{2}$ ($-2\pi \leq x \leq 2\pi$). 3
18. a. Prove that: $2\tan^{-1}\left(\frac{1}{3}\right) + \tan^{-1}\left(\frac{1}{7}\right) = \frac{\pi}{4}$. 2
- b. Find the angle between the pair of lines represented by equation $x^2 + 9xy + 14y^2 = 0$. 3
19. a. Use Chain rule to calculate $\frac{dy}{dx}$ if $y = 2u^2 - 3u + 1$ and $u = 2x^2$. 2
- b. Use first principle to find derivative of \cos^2x . 3

Group 'C'

[3 × 8 = 24]

20. a. If the roots of the equation $(a^2 + b^2)x^2 - 2(ac + bd)x + (c^2 + d^2) = 0$ are equal then prove that $\frac{a}{b} = \frac{c}{d}$. 2
- b. If α and β are the roots of the equation $ax^2 + bx + c = 0$ then find the equation whose roots are α^3 and β^3 . 3
- c. If the quadratic equations $x^2 + px + q = 0$ and $x^2 + qx + p = 0$ have a common root prove that either $p = q$ or $p + q + 1 = 0$. 3
21. a. If p is the length of perpendicular dropped from origin to the line $\frac{x}{a} + \frac{y}{b} = 1$ then prove that $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{p^2}$. 3
- b. Find the distance between the parallel lines $2x - 5y = 6$ and $6x - 15y + 11 = 0$. 2
- c. Find the equation of the bisectors of the angles between the lines containing origin where equations are $4x - 3y + 1 = 0$ and $12x - 5y + 7 = 0$ prove that the bisectors are at right angles to each other. 3
22. a. Find $\frac{dy}{dx}$ when $x + y = \cos(x - y)$. 2
- b. Find $\frac{dy}{dx}$ when $x = \tan t$, $y = \sin t \cos t$. 3
- c. Find the derivative of $\log(\sqrt{a+x} + \sqrt{a-x})$. 3

Send - Up Examination - 2079

Class: XI

Time: 3 hrs

F.M.: 75

P.M.: 30

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11 × 1 = 11]

- The negation of the statement "All students are labourious" is:
a. no student is labourious b. some students are labourious
c. all students are not labourious d. some students are not labourious
- Which one of the following for complex numbers is true?
a. $|z| = |\bar{z}|$ b. $|z + w| = |z| + |w|$ c. $z \geq w$ d. $|z| \leq \operatorname{Re}(z)$
- The value of $\sin A + \sin B + \sin C$ is:
a. $\frac{\Delta}{R}$ b. $\frac{S}{R}$ c. $\frac{S}{\Delta}$ d. $\frac{abc}{4R}$
- Two vectors \vec{a} and \vec{b} are orthogonal if
a. $\vec{a} \cdot \vec{b} = 90^\circ$ b. $\vec{a} \times \vec{b} = 0$ c. $\vec{a} \cdot \vec{b} = 0$ d. $\vec{a} \times \vec{b} = 90^\circ$
- If, in any ΔABC , $A = 45^\circ$ and $B = 60^\circ$. then a: b is
a. $\sqrt{3} : \sqrt{2}$ b. $\sqrt{2} : \sqrt{3}$ c. $1 : 2$ d. $\sqrt{3} = 2$
- The length of latus rectum of the parabola $y^2 = 4ax$ is given by
a. $\frac{2b^2}{a}$ b. $\frac{2a^2}{b}$ c. $4a$ d. $\pm 2a$
- Two events A and B are independent if:
a. $P(A \cup B) = P(A) \cdot P(B)$ b. $P(A \cap B) = P(A) \cdot P(B)$
c. $P(A \cup B) = P(A) + P(B)$ d. $P(A \cap B) = P(A) + P(B)$
- The function $f(x) = \frac{3x - 1}{x^2 - x}$ is discontinuous when:
a. $x = 0, 1$ b. $x = 1$ c. $x = 1, \frac{1}{3}$ d. $x = 0, -1$
- If $f'(a) = 0$ and $f''(a) < 0$, then $f(x)$ has:
a. minimum value at $x = a$ b. maximum value at $x = a$
c. both minimum and maximum value at $x = a$ d. neither minimum nor maximum value at $x = a$.
- How many iterations do you need to get the root if you start with $a = 1$ and $b = 2$ and the tolerance is 10^{-4} ?
a. 10 b. 12 c. 13 d. 14
- A bicycle slows down with a uniform retardation of 2ms^{-2} to 36kmh^{-1} in 5 seconds. The initial velocity is:
a. 10ms^{-1} b. 15ms^{-1} c. 18ms^{-1} d. 20ms^{-1}

OR

The demand function for a product is given by $p = 60 - 0.3q$.

How many units are demanded when $p = 45$?

- a. 45 b. 50 c. 40 d. 60

Group 'B'

[8 × 5 = 40]

12. A relation $f = \{(1, 2), (3, 5), (6, 8)\}$ is given.

Answer the following questions:

- i. Is the relation a function? Use arrow diagram.

1

- ii. Is function one to one, onto or both? 1
- iii. Find the inverse of f if possible. 1
- iv. Find the composite function fo f^{-1} and f^{-1} of. 1
- v. How are $f \circ f^{-1}$ and $f^{-1} \circ f$ of related? 1
13. Show that: 5
- $$\begin{vmatrix} 1+x & 1 & 1 \\ 1 & 1+y & 1 \\ 1 & 1 & 1+z \end{vmatrix} = xyz \left(1 + \frac{1}{x} + \frac{1}{y} + \frac{1}{z} \right)$$
14. a. If $(a + b + c)(b+c - a) = 3bc$, show that $A = 60^\circ$ 3
- b. Find the cosine of the angle between the vectors $\vec{i} - 2\vec{j} + 3\vec{k}$ and $\vec{i} + 3\vec{j} + 2\vec{k}$. 2
15. a. A frequency distribution gives the following results: 2
- i. CV = 5% ii. s.d. = $\sigma = 2$
- iii. Karl Pearson's coefficient of skewness = 0.5. Find the mean and mode of the distributions.
- b. A coin is tossed successively three times. Find the probability of getting: 3
- i. exactly two heads ii. at least two heads
- iii. at most two heads.
16. a. Evaluate: Evaluate: $\lim_{x \rightarrow 0} \frac{x \tan \theta - \theta \tan x}{x - \theta}$ 4
- b. What is the condition for the limit of a function to exist at a point? 1
17. Evaluate: $\int \frac{x^2 dx}{(1+x^2)^2}$ 5
18. Define Trapezoidal rule. Evaluate $\int_0^1 \frac{dx}{1+x}$, $n = 5$ using Trapezoidal rule. [1+4]
19. The resultant of two forces P and Q acting at an angle α is equal to $(2m + 1)\sqrt{P^2 + Q^2}$. When they act at angle $(90^\circ - \alpha)$ the resultant is $(2m - 1)\sqrt{P^2 + Q^2}$. Prove that $\tan \alpha = \frac{m - 1}{m + 1}$. 5

OR

A firm has a demand function $P = 108 - 5Q$ & the cost of function $C = -12Q + Q^2$. Find the price at which the profit is maximum. Also find the maximum profit. [4+1]

Group 'C'

[3 × 8 = 24]

20. a. Construct truth table for the compound statement $(p \Rightarrow q) \Leftrightarrow (\sim p \vee \sim q)$ 2
- b. If $A = (-1, 4)$ and $B = [3, 5]$, find $A - B$ and show it in a number line. 2
- c. Draw the graph of the function $y = (x - 1)(x - 2)(x - 3)4$
21. a. The single equation of pair of lines is $6x^2 - xy - 12y^2 - 8x + 29y - 14 = 0$
- i. Find the equation of pair of lines represented by the single equation. 4
- ii. Are the pair of lines represented by the given equation passes through origin? 1
- iii. Find the point of intersection of the pair of lines. 2
- b. For what value of m is the pair of vectors $3\vec{i} - 4\vec{j} + 7\vec{k}$ and $2\vec{i} + 5\vec{j} + m\vec{k}$ orthogonal? 1
22. a. Distinguish between derivative and antiderivative of a function. Write their physical meanings and illustrate with example in your context. Find the differential coefficient of $\sec^2(\tan \sqrt{x})$ with respect to x. [1+2+2]
- b. Find the area bounded by the y - axis, the curve $x^2 = 4(y - 2)$ and the line $y = 11$. 3

Send - Up Examination - 2080

Class: XI

Time: 3 hrs.

F. M.: 75

P.M. : 30

Set: A

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11 × 1 = 11]

1. If $A = (-1, 3]$ and $B = [0, 4)$, then $A - B$ is:
 - a. $[-1, 0)$
 - b. $(-1, 0]$
 - c. $[-1, 0]$
 - d. $(-1, 0)$
2. If the positive numbers a, b and c in AP then
 - a. $b^2 = ac$
 - b. $b^2 < ac$
 - c. $b^2 > ac$
 - d. $b = ac$
3. The value of $\tan^{-1}\left(\frac{1}{2}\right) + \tan^{-1}\left(\frac{1}{3}\right)$ is:
 - a. $\frac{\pi}{2}$
 - b. $\frac{\pi}{4}$
 - c. $\frac{\pi}{3}$
 - d. $\frac{\pi}{6}$
4. The distance between the lines $4x - 3y = 22$ and $4x - 3y = 12$ is:
 - a. 0 units
 - b. 1 unit
 - c. 2 units
 - d. 5 units
5. Unit vector along the vector $3\vec{i} - 4\vec{j}$ is:
 - a. $\frac{3\vec{i} - 4\vec{j}}{2}$
 - b. $\frac{3\vec{i} - 4\vec{j}}{3}$
 - c. $\frac{3\vec{i} - 4\vec{j}}{4}$
 - d. $\frac{3\vec{i} - 4\vec{j}}{5}$
6. If Skewness (S_k) = 0 then frequency distribution is:
 - a. symmetrical
 - b. positive skewed
 - c. negative skewed
 - d. all of the above
7. The value of $\lim_{x \rightarrow 0} \frac{\sin 5x}{\sin 3x}$ is:
 - a. 0
 - b. 1
 - c. $3/5$
 - d. $5/3$
8. The derivative of $f(x) = \frac{1}{x} + x$ is:
 - a. $\log x + 1$
 - b. $\log x + \frac{x^2}{x} \frac{x^2}{2}$
 - c. $1 - \frac{1}{x^2} \frac{1}{x^2}$
 - d. $1 + \frac{1}{x^2} \frac{1}{x^2}$
9. The derivative of $\tan x$ with respect to $\sec x$ is:
 - a. $\operatorname{cosec} x$
 - b. $\sec^2 x$
 - c. $\sin x$
 - d. $\sec x \cdot \tan x$
10. The second derivative of $f(x) = x^2 + \log x$ is:
 - a. $2x + \frac{1}{x} \frac{1}{x}$
 - b. $2 - \frac{1}{x}$
 - c. $2 - \frac{1}{x^2} \frac{1}{x^2}$
 - d. $2 + \log x$
11. If a be the square root of x then Newton – Raphson formula for square root is:
 - a. $x_{n+1} = \frac{1}{2} \left(x_n + \frac{a}{x_n} \right)$
 - b. $x_{n+1} = \frac{1}{2} \left(x_n - \frac{a}{x_n} \right)$
 - c. $x_{n+1} = \frac{1}{2} \left(x_n + \frac{x_n}{a} \right)$
 - d. $x_{n+1} = \frac{1}{2} \left(x_n - \frac{x_n}{a} \right)$

OR

A train covers 150m in 10s. with an initial velocity of 5m/s, then the acceleration is:

- a. 2 ms^{-2}
- b. 3 ms^{-2}
- c. 4 ms^{-2}
- d. 1 ms^{-2}

Group 'B'

Give short answer to the following questions.

[8 × 5 = 40]

12. a. Construct truth table for the compound statement $\sim (p \wedge q)$ 2
 - b. State and prove De-Morgan's Law. 3
13. a. Find the domain and range of $y = \sqrt{x-2} \sqrt{x-2}$. 2
 - b. If a, b, c are the $p^{\text{th}}, q^{\text{th}}$ and r^{th} terms of a G.P., Prove that $a^{q-r} \cdot b^{r-p} \cdot c^{p-q} = 1$. 3
14. a. Find the general values of $2\sin x + \cot x - \operatorname{cosec} x = 0$. 2
 - b. Prove that: $2\tan^{-1}\left(\frac{1}{3}\right) + \tan^{-1}\left(\frac{1}{7}\right) = \frac{\pi}{4}$ 3

15. a. Show that the three points A, B and C with position vectors $\vec{i} + 2\vec{j} + 4\vec{k}$, $2\vec{i} + 5\vec{j} - \vec{k}$, $3\vec{i} + 8\vec{j} - 6\vec{k}$ respectively are collinear. 2

b. Examine whether the following vectors are linearly or independent $\vec{a} = \vec{i} - 2\vec{j} + \vec{k}$, $\vec{b} = 2\vec{i} + \vec{j} - \vec{k}$ and $\vec{c} = 7\vec{i} - 4\vec{j} + \vec{k}$. 3

16. Calculate the Mean, Standard deviation and Pearson's coefficient of Skewness from the following frequency distribution.

Investment	10-20	20-30	30-40	40-50	50-60
No. of Comp:	5	12	20	11	2

17. a. Evaluate: $\lim_{x \rightarrow 0} \frac{\operatorname{cosec} x - \cot x}{x}$ 2

b. Evaluate: $\lim_{x \rightarrow \infty} \sqrt{x} (\sqrt{x} - \sqrt{x-a})$ 3

18. a. Find the derivative of $\frac{1 - \cos x}{1 + \cos x}$ 2

b. Find the maxima and minima values of $f(x) = x^3 - 6x^2 + 3$ 3

19. Using Simpson's $\frac{1}{3}$ rule, evaluate $\int_0^{\pi} \sin x \, dx$, $n = 6$ 5

OR

At what angle do forces equal to $(P + Q)$ N and $(P - Q)$ N act so that the resultant may be $\sqrt{P^2 + Q^2}$?

Group 'C'

Give long answer to the following questions. **[3 × 8 = 24]**

20. a. Find the real numbers x and y if $x+iy = (2 - 3i)(3 - 2i)2$
 b. If one root of the equation $ax^2 + bx + c = 0$ be four times the other root, show that $4b^2 = 25ac$. 2

c. Show that: $\begin{vmatrix} 1+x & 1 & 1 \\ 1 & 1+y & 1 \\ 1 & 1 & 1+z \end{vmatrix} = xyz \left(1 + \frac{1}{x} + \frac{1}{y} + \frac{1}{z}\right)$. 4

21. a. Find the equation to the pair of straight lines joining the origin to the intersection of the straight line $y = mx+c$ and the curve $x^2 + y^2 = a^2$, prove that they are at right angles if $2c^2 = a^2 (1 + m^2)$. 4

b. Show that the angle between two diagonals of a cube is $\cos^{-1}\left(\frac{1}{3}\right)$. 4

22. a. Evaluate: $\int \sqrt{1 + \cos mx} \, dx$ 2

b. Evaluate: $\int e^{\sin^2 x} \sin 2x \, dx$ 2

c. Using the method of definite integral, find the area of the ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$. 4

Send - Up Examination - 2080

Class: XI

Time: 3 hrs.

F. M.: 75

P.M. : 30

Set: B

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11 × 1 = 11]

1. A - B is equal to:
 - a. $A \cap B$
 - b. $\bar{A} \cap B$
 - c. $A \cap \bar{B}$
 - d. $A \cup B$
2. A square matrix A is symmetric if:
 - a. $A^2 = A$
 - b. $A^T = A$
 - c. $A^T = -A$
 - d. $A^2 = -A$
3. If $4\sin^2\theta = 1$, then values of θ are:
 - a. $n\pi \pm \frac{\pi}{6}$
 - b. $n\pi \pm \frac{\pi}{3}$
 - c. $2n\pi \pm \frac{\pi}{6}$
 - d. $2n\pi \pm \frac{\pi}{3}$
4. The equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ represents the same straight line if and only if:
 - a. $\frac{a_1}{a_2} = \frac{b_1}{b_2}$
 - b. $\frac{a_1}{b_1} = -\frac{b_2}{a_2}$
 - c. $\frac{a_1}{a_2} = -\frac{b_1}{b_2}$
 - d. $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$
5. If the vectors $4\vec{i} + \vec{j} + \vec{k}$ and $\lambda\vec{i} + 4\vec{j} + 4\vec{k}$ are collinear then the value of λ is:
 - a. 4
 - b. -4
 - c. 16
 - d. -16
6. If SD be standard deviation and R be the range of a same distribution then:
 - a. $SD > R$
 - b. $SD \geq R$
 - c. $SD < R$
 - d. $SD \leq R$
7. The value of $\lim_{x \rightarrow \infty} \frac{2x^5 + 5}{x^2 - 3}$ is:
 - a. $\frac{3}{5}$
 - b. $\frac{5}{3}$
 - c. $-\frac{5}{3}$
 - d. doesn't exist
8. The derivative of $\sec^3(x^2)$ is:
 - a. $3\sec^2(x)^2$
 - b. $3\sec^2x$
 - c. $3\sec^2(x^2)\tan^2(x^2)$
 - d. $6x\sec^3(x^2) \cdot \tan(x^2)$
9. If $y = e^{\cos x}$ then, $\frac{dy}{dx}$ is:
 - a. $e^{\cos x}$
 - b. $e^{-\sin x}$
 - c. $-\sin x e^{\cos x}$
 - d. $\sin x e^{\cos x}$
10. If $y = e^{2u}$ and $u = \log x$, then $\frac{dy}{dx}$ is:
 - a. $\frac{e^{2u}}{x}$
 - b. $\frac{2e^{2u}}{x}$
 - c. 2
 - d. $2x$
11. The general formula for Newton - Rashson method is:
 - a. $x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$
 - b. $x_n = x_{n+1} - \frac{f'(x_n)}{f(x_n)}$
 - c. $x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$
 - d. $x_{n+1} = x_n + \frac{f(x_n)}{f'(x_n)}$

OR

A car moving with a velocity of 15 ms^{-1} has uniform acceleration of 2 ms^{-2} . If it moves for 2.5 sec, what is the final velocity?

- a. 5 ms^{-1}
- b. 10 ms^{-1}
- c. 20 ms^{-1}
- d. 15 ms^{-1}

Group 'B'

Give short answer to the following questions.

[8 × 5 = 40]

12. a. Construct truth table for the compound statements $\sim p \vee \sim q$. 2
- b. If $x \in \mathbb{R}$ and a be any positive real number then, $|x| < a \Rightarrow -a < x < a$ and conversely. 3

13. a. Find the domain and range of the function $y = \sqrt{x - 5}$. 2
 b. Find the sum of the infinite series
 $\frac{2}{3} + \frac{4}{3^2} + \frac{6}{3^3} + \frac{8}{3^4} + \dots$ 3
14. a. Find the general value of $\sin^2\theta - 2\cos\theta + \frac{1}{4} = 0$. 2
 b. Prove that: $4(\cot^{-1}3 + \operatorname{cosec}^{-1}\sqrt{5}) = \frac{\pi}{4}$. 3
15. a. Show that the three points A, B and C with position vectors $\vec{i} - 2\vec{j} + 3\vec{k}$, $2\vec{i} + 3\vec{j} - 4\vec{k}$, $-7\vec{i} + 10\vec{k}$ respectively are collinear. 2
 b. Show that vectors $\vec{a} - 3\vec{b} + 5\vec{c}$, $\vec{a} - 2\vec{b} + 3\vec{c}$, $-2\vec{a} + 3\vec{b} - 4\vec{c}$ are coplanar, where \vec{a} , \vec{b} , \vec{c} are any three vectors. 3
16. a. If A and B are two independent events with $P(A) = \frac{2}{3}$ and $P(B) = \frac{3}{5}$, find $P(A \cup B)$ and $P(\overline{A \cup B})$. 2
 b. In a certain distribution, the following results were obtained: Mean = 45, Median = 48, coefficient of Skewness = -0.4. Find the standard deviation and the coefficient of variation. 3
17. a. Evaluate: $\lim_{x \rightarrow 0} \frac{1 - \cos 7x}{x^2}$ 2
 b. A function $f(x)$ is defined as follows:

$$f(x) = \begin{cases} \frac{2x^2 - 18}{x - 3} & \text{for } x \neq 0 \\ k & \text{for } x = 3 \end{cases}$$
 3
 Find the value of k so that $f(x)$ is continuous at $x = 3$.
18. a. Find the derivative of $\frac{1 + \sin x}{1 - \sin x}$ 2
 b. Calculate the maximum and minimum values of
 $f(x) = 2x^3 - 3x^2 - 36x$. 3
19. Evaluate using trapezoidal rule the integral $\int_0^{\pi} \sin x \, dx$. Estimate the maximum error of approximation if $n = 4$. [4+1]

OR

At what angle do forces equal to $(P + Q) N$ and $(P - Q) N$ act so that the resultant may be $\sqrt{P^2 + Q^2}$?

Group 'C'

Give long answer to the following questions.

[3 × 8 = 24]

20. a. Prove that: $(1+i)^4 \left(1 + \frac{1}{i}\right)^4 = 16$ 2
 b. If the roots of the equation $ax^2 + bx + c = 0$ be in the ratio of 3:4. Prove that $12b^2 = 49ac$. 2
 c. Show that: $\begin{vmatrix} a - b - c & 2a & 2a \\ 2b & b - c - a & 2b \\ 2c & 2c & c - a - b \end{vmatrix} = (a + b + c)^3$. 4
21. a. Prove that the two straight lines $(x^2 + y^2) \sin^2\alpha = (x \cos\theta - y \sin\theta)^2$ include an angle 2α . 4
 b. Find the direction *cosines* of two lines which satisfy the relations $2l + 2m - n = 0$ and $lm + mn + nl = 0$. Also find the angle between the two lines. 4

22. a. Evaluate: $\int \sqrt{1 - \cos px} \, dx$. 2
 b. Evaluate: $\int e^{\sin x \cos x} \cos 2x \, dx$. 2
 c. Using the method of definite integral, find the area of circle $x^2 + y^2 = 25$. 4

Send - Up Examination - 2081

Class: XI Time: 3 hrs. F. M.: 75 P.M. : 30 Set: A

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11 × 1 = 11]

1. The negation of the compound statement $(p \wedge \sim q)$ is
 a. $\sim p \wedge q$ b. $p \wedge \sim q$ c. $\sim p \wedge \sim q$ d. $\sim p \vee q$
2. The range of the function $f(x) = |x - 2|$ is
 a. $(0, \infty)$ b. $(-\infty, 0)$ c. $[0, \infty)$ d. $(-\infty, \infty)$
3. The value of $\cos^{-1} \frac{3}{5}$ is equal to
 a. $\sin^{-1} \frac{4}{5}$ b. $\sec^{-1} \frac{5}{3}$ c. $\tan^{-1} \frac{3}{4}$ d. all of the above
4. The intersection of $y = 0$ plane and $z = 0$ plane is
 a. y-axis b. z-axis c. x-axis d. x = 0 plane
5. Three vectors $\vec{i} + \vec{j}$, $\vec{i} + \vec{k}$ and $-\vec{i} - \vec{k}$ are
 a. linearly independent b. linearly dependent c. collinear d. none of them
6. The probability of getting 53 Friday or Saturday or both in a leap year is
 a. $\frac{1}{7}$ b. $\frac{2}{7}$ c. $\frac{3}{7}$ d. $\frac{1}{122}$
7. The value of $\lim_{x \rightarrow \infty} x \sin \frac{1}{x}$ is
 a. 1 b. -1 c. 0 d. ∞
8. If $f(x) = x^2 - \frac{1}{x}$, then $f'(x)$ is equal to
 a. $2x - \frac{1}{x^2}$ b. $2x - 1nx$ c. $2x + 1nx$ d. $2x + \frac{1}{x^2}$
9. The value of $\int_0^{9/50} \frac{1}{\sqrt{1-2x}} \, dx$ is
 a. $\frac{4}{5}$ b. 1 c. $\frac{1}{5}$ d. 0
10. The area bounded by the curve $x = f(y)$, y-axis and the two lines $y = a$ and $y = b$ is
 a. $\int_a^b x \, dy$ b. $\int_a^b y \, dy$ c. $\int_a^b y \, dx$ d. $\int_a^b x \, dx$
11. The number of positive root of the equation $x^3 + x - 4 = 0$ is
 a. 1 b. 2 c. 3 d. none of them

OR

The resultant of two forces P and Q ($P > Q$) is minimum when the angle (α) between them is

- a. $\alpha = 0^\circ$ b. $\alpha = 60^\circ$ c. $\alpha = 90^\circ$ d. $\alpha = 180^\circ$

Group 'B'

[8 × 5 = 40]

12. a. If $A \cap B = \phi$, prove that $B \subseteq \bar{A}$. 2
 b. Let $f : \mathbb{R} - \{2\} \rightarrow \mathbb{R} - \{3\}$ be a function given by $\frac{3x}{x-2}$. Show that f is bijective. Also find f^{-1} . [2 + 1]
13. a. Find the sum of the series:
 $\frac{1}{5} + \frac{3}{5^2} + \frac{5}{5^3} + \frac{7}{5^4} + \dots$ 3
 b. Find the adjoint of the matrix $\begin{pmatrix} 3 & 2 \\ -1 & 6 \end{pmatrix}$. 2
14. a. Prove that $\tan^{-1} \frac{1}{3} + \tan^{-1} \frac{1}{5} + \tan^{-1} \frac{1}{7} + \tan^{-1} \frac{1}{8} = \frac{\pi}{4}$ 3
 b. Find the equation of pair of lines represented by the single equation $6x^2 - xy - 12y^2 - 8x + 29y - 14 = 0$. 2
15. a. If p and p^1 be the length of the perpendiculars from the origin upon the straight line whose equations are $x \sec \theta + y \operatorname{cosec} \theta = a$ and $x \cos \theta - y \sin \theta = a \cos 2\theta$, then
 i. find p and p^1 .
 ii. show that $4p^2 + 4p^{1^2} = a^2$. [1 + 2]
- b. Show that the three points A, B and C with position vectors $\vec{i} - 2\vec{j} + 3\vec{k}$, $2\vec{i} + 3\vec{j} - 4\vec{k}$ and $-7\vec{j} + 10\vec{k}$ are collinear. 2

16. An analysis of monthly wages paid to the workers in two firms A and B belonging to the same industry give the following results:

	Firm A	Firm B
No. of workers	600	700
Average monthly wages	Rs. 182.00	Rs. 179.40
Variance of distribution of wage	78	98

- i. Which firm A or B has a larger wage bill?
 ii. In which firm A or B has greater variability in individual wages?
 iii. Find the combined mean and combined standard deviation of the monthly wages of workers of firm A and firm B taken together. [1 + 1 + 3]
17. a. What do you mean by indeterminate form?
 Evaluate: $\lim_{x \rightarrow \frac{\pi}{4}} \frac{\sec^2 x - 2}{\tan x - 1}$. [1+2]
 b. Test the continuity or discontinuity of the function $f(x) = \frac{x}{|x|}$ at $x = 0$. 2
18. a. Integrate: $\int \frac{dx}{(a^2 + x^2)^2}$. 3
 b. Find the area enclosed by the axis of x and the curve $y = 3x - 5x^2$. 2
19. Given $I = \int_1^5 x^4 dx$
 i. Estimate the value of I using trapezoidal rule with 4 sub-intervals.
 ii. Find the error bound for this estimation.
 iii. If the exact value of I is 624.80, determine the error.
 iv. Is the error within the bound? [2+1+1+1]

OR

- a. A body is projected vertically upwards with velocity u and t seconds afterwards another body is projected similarly with the same velocity. Show that they meet at a height $(4u^2 - g^2 t^2) / 8g$ from the point of projection after $\left(\frac{u}{g} - \frac{t}{2}\right)$ secs from the instant of projection of the second body. 3

- b. If a force \overline{p} be resolved into two forces making angles 45° and 15° with its direction; show that the latter force is $\frac{\sqrt{6}}{3} p$. 2

Group 'C'

[3 × 8 = 24]

20. a. If the quadratic equations $x^2 + px + q = 0$ and $x^2 + p'x + q' = 0$ have a common root, show that it must be either $\frac{pq' - p'q}{q - q'}$ or $\frac{q - q'}{p' - p}$. 3
- b. Prove that $\frac{\overline{z}}{|z|^2}$ is the multiplicative inverse of z . 2
- c. Sketch the graph of the function $y = f(x) = x^2 - 4x + 3$. 3
21. a. Find the direction cosines of two lines which satisfy the relations $1 + m + n = 0$ and $2lm - mn + 2nl = 0$. 3
- b. Solve: $\tan 5\theta = \cot 2\theta$. 2
- c. Show that the vectors $5\vec{a} + 6\vec{b} + 7\vec{c}$, $7\vec{a} - 8\vec{b} + 9\vec{c}$ and $3\vec{a} + 20\vec{b} + 5\vec{c}$ are coplanar, where \vec{a} , \vec{b} , \vec{c} are any three vectors. 3
22. a. Find, from definition, the derivative of $\tan(3x - 4)$. 3
- b. Evaluate: $\int_0^{\pi/4} \sin^2 x \, dx$. 2
- c. Find the interval in which the function $f(x) = 2x^3 - 15x^2 + 36x + 1$ is increasing or decreasing. 3

Send - Up Examination - 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M. : 30

Set: B

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11 × 1 = 11]

- Which one relation is not true?
 a. $\phi \subseteq \phi$ b. $\phi \subseteq A$, A being any non - empty set c. $\phi \in \{ \phi \}$
 d. $\phi = \{ 0 \}$.
- The graph of the function $y = x^2$ is symmetric about
 a. x -axis b. y -axis c. origin d. both a and b
- The solution of the equation $\tan x - \cot x = 0$ is
 a. $\frac{\pi}{6}$ b. $\frac{\pi}{3}$ c. $\frac{\pi}{2}$ d. $\frac{\pi}{4}$
- If $ax^2 + 2hxy + by^2 = 0$ are represented by $y = m_1x$ and $y = m_2x$ then $m_1 + m_2$ is equal to
 a. $\frac{2h}{b}$ b. $\frac{2b}{h}$ c. $-\frac{2h}{b}$ d. $-\frac{2b}{h}$.
- For what value of λ the vectors $\vec{i} + \vec{j} - 4\vec{k}$ and $-3\vec{i} - \lambda\vec{j} + 12\vec{k}$ will be collinear?
 a. $\frac{1}{3}$ b. $-\frac{1}{3}$ c. 3 d. - 3
- If A and B are two events such that $P(A) = 0.3$, $P(B) = 0.55$ and $P(A \cap B) = 0.25$, then probability of happening only one events A and B is
 a. 0.6 b. 0.45 c. 0.35 d. 0.5
- The point of discontinuity of the function $f(x) = \frac{x - 4}{(x - 2)(x - 3)}$ is at
 a. $x = 2$ b. $x = 3$ c. $x = 2$ and $x = 3$ d. $x = 4$

8. If $y = \sec x$ then $\frac{dy}{dx}$ when $x = \frac{\pi}{4}$ is
 a. 1 b. $\sqrt{2}$ c. $\frac{1}{\sqrt{2}}$ d. $2\sqrt{2}$.
9. The value of $\int_0^4 \sqrt{1+2x} \, dx$ is
 a. 3 b. 1 c. $\frac{26}{5}$ d. $\frac{26}{3}$
10. The area between $y = f(x)$, x-axis and the two ordinates $x = a$, $x = b$ is positive means, the area lies
 a. below the x-axis b. above the x-axis c. left of y-axis d. right of y-axis
11. In the Newton-Raphson method to get an approximate root of an equation, the number of guess number is
 a. one b. two c. three d. four

OR

If X and Y be the algebraic sum of the resolved parts of the forces along and perpendicular to the horizon then the system will be in equilibrium if

- a. $X = 0, Y = 1$ b. $X = 1, Y = 0$ c. $X = 1, Y = 1$ d. $X = 0, Y = 0$.

Group 'B'

[8 × 5 = 40]

12. a. Solve the following inequality and draw its graph $|2x + 3| \leq 1$. 2
 b. Define one-one function. Find the domain and the range of the function

$$f(x) = \frac{1}{x-1}.$$
 [1 + 2]
13. a. If H be the harmonic mean between 'a' and 'b' prove that $\frac{1}{H-a} + \frac{1}{H-b} = \frac{1}{a} + \frac{1}{b}$ 3
 b. Using properties of determinants, prove that $\begin{vmatrix} 1+q_1 & q_2 & q_3 \\ q_1 & 1+q_2 & q_3 \\ q_1 & q_2 & 1+q_3 \end{vmatrix} = 1 + q_1 + q_2 + q_3.$ 2
14. a. If $\cos^{-1}x + \cos^{-1}y = \frac{\pi}{2}$, show that $x^2 + y^2 = 1$. 3
 b. Find the direction cosines of the line which is perpendicular to the lines with direction cosines proportional to 3, -1, 1 and -3, 2, 4. 2
15. a. If B_1 and B_2 are the bisectors of the angles between the lines $4x - 3y + 1 = 0$ and $12x - 5y + 7 = 0$, then
 i. find B_1 and B_2 .
 ii. show that B_1 and B_2 are at right angles to each other. [1 + 2]
- b. Express $\vec{r} = (8, -5)$ as the linear combination of $\vec{a} = (2, -3)$ and $\vec{b} = (-1, -2)$. 2
16. Following table gives the distribution of daily wage in a company
- | | | | | | |
|----------------|-------|---------|---------|---------|---------|
| Wages (in Rs.) | 0-100 | 100-200 | 200-300 | 300-400 | 400-500 |
| No. of workers | 8 | 16 | 30 | 20 | 6 |
- i. Find mean, mode and standard deviation
 ii. Calculate Skewness.
 iii. Examine whether the above distribution is symmetrical or not. [3 + 1 + 1]
17. a. Define continuity of a function $f(x)$ at $x = a$. Test the continuity of the function $f(x) = |x - 2|$ at $x = 2$. [1+2]
 b. Prove that $\lim_{x \rightarrow 0} \frac{a^x + b^x - 2}{x} = \log_e(ab)$. 2
18. a. Integrate: $\int x \cos^2 x \, dx$. 3
 b. Find the area bounded by the curve $y^2 = 8ax$, the x-axis and the ordinate at the point $(8a, 0)$. 2
19. a. Evaluate, using Simpson's rule the integral $\int_1^5 x^4 \, dx$ for 4 equal sub-intervals. 3

- b. Using the Newton-Raphson method, find the square root of 3 correct to 3 places of decimal in (1, 2). 2

OR

- a. The resultant of two forces P and Q acting at an angle α is equal to $(2m + 1)\sqrt{P^2 + Q^2}$. When they act at an angle $(90^\circ - \alpha)$ the resultant is $(2m - 1)\sqrt{P^2 + Q^2}$. Prove that $\tan \alpha = \frac{m - 1}{m + 1}$. 3
- b. An aeroplane lands on a runway with a velocity of 108 kmh^{-1} . If then its velocity slows down at the rate of 25 ms^{-2} ; find the distance covered by the aeroplane before coming to rest. 2

Group 'C'

[3 × 8 = 24]

20. a. Define conjugate of a complex number. If $x - iy = \sqrt{\frac{1-i}{1+i}}$, prove that $x^2 + y^2 = 1$. 3
- b. Draw the graph of $y = \frac{1}{x+2}$. 2
- c. If the roots of the equation $lx^2 + nx + n = 0$ be in the ratio $p : q$, prove that $\sqrt{\frac{p}{q}} + \sqrt{\frac{q}{p}} + \sqrt{\frac{n}{l}} = 0$. 3
21. a. Show that the points (1, 2, 3), (-1, -2, -1), (2, 3, 2) and (4, 7, 6) are the vertices of a parallelogram. 3
- b. Find the general solution of $\cos^2 x - \sin x + 5 = 0$. 2
- c. Examine whether the following vectors are linearly dependent or independent $\vec{a} = \vec{i} - 2\vec{j} + \vec{k}$, $\vec{b} = 2\vec{i} + \vec{j} - \vec{k}$ and $\vec{c} = 7\vec{i} - 4\vec{j} + \vec{k}$. 3
22. a. Find, from first principle, the derivative of $\log_e \frac{x}{10}$. 3
- b. Evaluate: $\int_0^{\pi/4} \tan x \, dx$. 2
- c. Show that the rectangle of largest possible area, for a given perimeter, is a square. 3

Send - Up Examination - 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M. : 30

Set: C

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11 × 1 = 11]

- The inverse of the compound statement $p \Rightarrow q$ is
 - $q \Rightarrow \sim p$
 - $q \Rightarrow p$
 - $\sim p \Rightarrow \sim q$
 - $\sim q \Rightarrow \sim p$
- What is the value of $3i^2 + i^3 + 9i^4 - i^7$?
 - 0
 - 1
 - 1
 - 6
- If $\sin^{-1} x + \cos^{-1} \frac{3}{4} = \frac{\pi}{2}$, then the value of x is
 - $\frac{3}{4}$
 - $\frac{4}{3}$
 - 1
 - $-\frac{3}{4}$
- If the vectors $\vec{a} = (1, 1, -4)$ and $\vec{b} = (-3, -\lambda, 12)$ are collinear, what is the value of λ ?
 - 0
 - 1
 - 2
 - 3
- Suppose that a line makes angles α , β and γ with x-axis, y-axis and z-axis respectively. Which one of the following is the value of $\sin^2 \alpha + \sin^2 \beta + \sin^2 \gamma$?
 - 1
 - 2
 - 3
 - 4
- The range of the probability of an event $P(E)$ is
 - $0 \leq P(E) \leq 1$
 - $-1 \leq P(E) \leq 1$
 - $0 < P(E) < 1$
 - $0 \leq P(E) < 1$
- The value of $\lim_{x \rightarrow 0} \frac{\tan x}{x}$ is
 - ∞
 - $\frac{0}{0}$
 - 0
 - 1

8. At what points is the function $f(x) = \frac{x+1}{(x-1)(x+2)}$ discontinuous?
 a. $x = -1$ and 2 b. $x = -1, 1$ and -2 c. $x = 1$ and -2 d. $x = 1$ and 2
9. What is the derivative of $\frac{3}{2x^2}$?
 a. $\frac{3}{x^3}$ b. $-\frac{3}{x^3}$ c. $\frac{3}{4x}$ d. $-\frac{3}{2x^3}$
10. The value of the integral $\int_0^{\frac{\pi}{4}} \sec^2 x dx$ is
 a. $\frac{\pi}{4}$ b. $\frac{\pi}{2}$ c. 1 d. 0
11. The number of negative roots of the equation $x^3 - x - 4 = 0$ is
 a. 0 b. 1 c. 2 d. 3

OR

If AB is a vertical line and AC is a line making angle θ with AB, then the acceleration down the line AC is
 a. $g \sin \theta$ b. $g \cos \theta$ c. $g \tan \theta$ d. $g \operatorname{cosec} \theta$

Group 'B'

[8 × 5 = 40]

12. a. If $A \subseteq B$, prove that $\overline{B} \subseteq \overline{A}$. 2
 b. If $a^x = b^y = c^z$ and a, b, c are in G.P., prove that x, y, z are in H.P. 3
13. a. Find the quadratic equation with rational coefficients one of whose roots is $2 + \sqrt{3}$. 2
 b. Prove that $\begin{vmatrix} x^2 + 1 & xy & xz \\ xy & y^2 + 1 & yz \\ xz & yz & z^2 + 1 \end{vmatrix} = 1 + x^2 + y^2 + z^2$. 3
14. a. Find the value of k so that the lines represented by $9x^2 + xy - ky^2 = 0$ are at right angles. 2
 b. Find the general solution of the equation: $2 \cos^2 \theta + \sin \theta \cos \theta - \sin^2 \theta = 0$. 3
15. a. Find the direction cosines of the line passing through the points $M(-1, 2, -3)$ and $N(4, -1, 1)$. 3
 b. Express $\vec{r} = (8, -5)$ as a linear combination of $\vec{a} = (2, -3)$ and $\vec{b} = (-1, -2)$. 2
16. a. Two students are selected from section A and B of grade XI, one from each group. Section A consists of 12 girls and 20 boys and section B consists of 16 girls and 16 boys. Find the probability of getting one girl and the other boy. 2
 b. Calculate the Karl Pearson's coefficient of skewness: 3
- | | | | | | |
|----------------|-----|-----|-----|-----|-----|
| Wages (in Rs.) | 100 | 110 | 120 | 130 | 140 |
| No. of Persons | 2 | 6 | 10 | 8 | 4 |
17. a. Evaluate: $\lim_{x \rightarrow 1} \frac{\sqrt{2x} - \sqrt{3 - x^2}}{x - 1}$ 2
 b. Find $\frac{dy}{dx}$ when $x^2 + y^2 = \sin(xy)$. 3
18. a. Evaluate: $\int \frac{dx}{1 - \sin x}$ 2
 b. Show that $\int_0^2 \frac{x dx}{\sqrt{x^2 + 2}}$ 3
19. a. Find the approximate value of $\int_0^{0.2} \sqrt[3]{1 - 2x^2} dx$ taking 2 equal intervals using Simpson's $\frac{1}{3}$ rule. 2
 b. Use the Newton-Raphson method to find the root of the equation $x^3 + 3x - 5 = 0$ lying between 1 and 2 correct to three places of decimals. 3

OR

- a. Forces equal to $7P$, $5P$ and $8P$ acting on a particle are in equilibrium. Find the angle between the latter pair of forces. 2
 b. A body is falling freely from the top of a building is observed to pass through $\frac{8}{9}$ th of the height of the building in the last second of its motion. Find the height of the building. 3

Group 'C'

[3 × 8 = 24]

20. a. If p and q are any two simple statements, prove that $p \vee [\sim (p \wedge q)]$ is a tautology. 2
 b. Find the domain and range of the function $y = 2 - 2x - x^2$. 2

- c. Test the periodicity of the function $f(x) = \sin 3x$. 1
d. Find the square roots of $-7 + 24i$. 3
21. a. If $\tan^{-1} x + \tan^{-1} y + \tan^{-1} z = \frac{\pi}{2}$, prove that $xy + yz + zx = 1$. 2
b. Find the equations of two straight lines each of which is parallel to and at a distance of $\sqrt{5}$ from the line $x + 2y = 7$. 3
c. Show that the three points A, B and C with position vectors $\vec{i} - 2\vec{j} + 3\vec{k}$, $2\vec{i} + 3\vec{j} - 4\vec{k}$ and $-7\vec{j} + 10\vec{k}$ are collinear. 3
22. a. Obtain the area bounded by the curves $y = x^2$ and $y = 2x$. 2
b. Discuss the continuity of the function.

$$f(x) = \begin{cases} x^2 + 2 & \text{if } x \leq 5 \\ 3x + 12 & \text{if } x > 5 \end{cases} \text{ at } x = 5. \quad 3$$

c. Find the maximum area of a rectangular plot of land which can be enclosed a rope of length 60 meters. 3

Send - Up Examination - 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M. : 30

Set: D

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11 × 1 = 11]

- What is the solution of the inequality $|x - 1| < 3$?
a. $[-2, 4]$ b. $(-2, 4)$ c. $(2, 4]$ d. $[-2, 4)$
- The absolute value of the complex number $z = 1 + \sqrt{3}i$ is
a. 2 b. 4 c. 1 d. $1 + \sqrt{3}$
- The domain of the function $y = 4 \cos^{-1} x$ is
a. $-4 \leq x \leq 4$ b. $-\frac{1}{4} \leq x \leq \frac{1}{4}$ c. $-\infty < x < \infty$ d. $-1 \leq x \leq 1$
- What are the direction cosines of the z-axis?
a. 0, 1, 0 b. 0, 0, 0 c. 0, 0, 1 d. 1, 0, 0
- Suppose that three vectors \vec{r} , \vec{s} and \vec{t} are such that $\vec{t} = m\vec{r} + n\vec{s}$, where m and n are scalars. These vectors are:
a. coplanar b. noncoplanar c. collinear d. noncollinear
- If two events A and B are independent and $P(A) = 0.4$ and $P(B) = 0.35$, what is the value of $P(A \cap B)$?
a. $\frac{61}{100}$ b. $\frac{3}{4}$ c. $\frac{7}{50}$ d. $\frac{1}{20}$
- What are the points of discontinuity of the function $f(x) = \frac{x^2 - 4}{(x-2)(x+3)}$?
a. -2 and -3 b. 2 and -3 c. $2, -2$ and -3 d. 2 and 3
- The value of the limit $\lim_{x \rightarrow a} \frac{x^3 - a^3}{x - a}$ is
a. $\frac{0}{0}$ b. $3a^3$ c. $3a$ d. $3a^2$
- If $y = x^2 - \frac{1}{x}$, then $\frac{dy}{dx}$ is
a. $2x - \frac{1}{x^2}$ b. $2x + \frac{1}{x^2}$ c. $\frac{x^3}{3} - \log x + c$ d. $2x + \frac{2}{x^2}$
- What is the value of the integral $\int_0^{\frac{\pi}{2}} \sin x dx$?
a. 1 b. -1 c. 0 d. $\frac{\pi}{2}$
- How many negative roots does the equation $f(x) = x^3 - x - 4 = 0$ have?
a. 0 b. 1 c. 2 d. 3

OR

If R is the resultant of two forces P and Q and if the forces are in equilibrium, then R is equal to

- a. $P + Q$ b. $P - Q$ c. 0 d. $\sqrt{P^2 + Q^2}$

Group 'B'

[8 × 5 = 40]

12. a. If $A \cap B = \varnothing$, prove that $A \subseteq \bar{B}$. 2
 b. Examine whether the function $f(x) = \frac{e^x - e^{-x}}{e^x + e^{-x}}$ is odd, even or neither. 3
13. a. If one root of the equation $ax^2 + bx + c = 0$ is four times the other root, show that $4b^2 = 25ac$. 2
 b. Find the sum of the series: $\frac{1}{5} + \frac{3}{5^2} + \frac{5}{5^3} + \frac{7}{5^4} + \dots$ 3
14. a. Find the point where the line joining the points (1, 2, 3) and (4, -4, 9) meets the zx-plane. 2
 b. Find the general solution of the equation. $2 \sin 3x - 2 \sin x + 5 \cos 2x = 0$. 3
15. a. Find the value of λ so that the vectors $3\vec{i} + \vec{j} - \vec{k}$ and $\lambda\vec{i} - 4\vec{j} + 4\vec{k}$ are collinear. 2
 b. If p is the length of the perpendicular dropped from the point (a, b) on the line $\frac{x}{a} + \frac{y}{b} = 1$, prove that $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{p^2}$. 3
16. a. A bag contains 6 white and 3 red balls. Two balls are drawn one after the another with replacement. Find the probability that they are of different color. 2
 b. Calculate the Karl Pearson's coefficient of Skewness from the following data: 3

X	10	11	12	13	14
f	3	12	18	12	3

17. Compute: a. $\lim_{x \rightarrow 1} \frac{x^2 + 3x - 4}{x - 1}$. b. $\lim_{x \rightarrow \theta} \frac{x \cos \theta - \theta \cos x}{x - \theta}$ [2+3]
18. a. Find $\frac{dy}{dx}$ if $y = \frac{x^2 - 2x}{x + 1}$. 2
 b. Integrate: $\int \frac{dx}{x\sqrt{x^2 - 9}}$. 3
19. a. Estimate the value of the integral $\int_0^\pi \sin x \, dx$ using trapezoidal rule to three decimal places if $n = 4$. 2
 b. Use Newton the -Raphson method to solve the equation $f(x) = x^3 + 3x^2 - 8 = 0$ correct to 4 places of decimals between 1 and 2. 3

OR

- a. If a force P is resolved into two forces making angles of 45° and 15° with its directions; show that the latter force is $\frac{\sqrt{6}}{3}P$. 2
- b. If a, b, c are the spaces described by a particle during the p^{th}, q^{th}, r^{th} seconds of its motion, respectively, prove that $a(q - r) + b(r - p) + c(p - q) = 0$. 3

Group 'C'

[3 × 8 = 24]

20. a. Let p and q be two simple statements. Prove that $\sim (p \vee q) \equiv (\sim p \wedge \sim q)$. 2
 b. If $\frac{\log x}{y-z} = \frac{\log y}{z-x} = \frac{\log z}{x-y}$, prove that $x^x y^y z^z = 1$. 2
- c. Prove that $\begin{vmatrix} x^2 + 1 & xy & xz \\ xy & y^2 + 1 & yz \\ xz & yz & z^2 + 1 \end{vmatrix} = 1 + x^2 + y^2 + z^2$. 4
21. a. Solve the equation: $\tan^{-1} x - \cot^{-1} x = 0$. 2
 b. Find the equation of the pair of straight lines joining the origin to the points of intersections of the straight line $y = mx + c$ and the curve $x^2 + y^2 = a^2$. Prove that they are at right angles if $2c^2 = a^2(1 + m^2)$. 3
 c. Let $\vec{a} = 2\vec{i} + \vec{j}$, $\vec{b} = \vec{i} + \vec{j}$ and $\vec{c} = \vec{i} - \vec{j}$. Find the scalars x and y such that $\vec{a} = x\vec{b} + y\vec{c}$. 3
22. a. A gardener having 120 m of fencing material wishes to enclose a rectangular plot of land and also to erect a fence across the land parallel to two of the sides. Find the maximum area she can enclose. 4
 b. Find the area of the ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$ using ant derivatives. 4

Send - Up Examination - 2082

Class: XI

Time: 3 hrs.

F. M.: 75

P.M. : 30

Set: A

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

1. The negation of the compound statement $(p \wedge \sim q)$ is
 a. $(\sim p \wedge p)$ b. $(\sim p \wedge \sim q)$ c. $(p \wedge \sim q)$ d. $(\sim p \vee \sim q)$
2. What is the value of **a**, if the difference of roots of the equation $x^2 - ax + 8 = 0$ is 2?
 a. ± 2 b. ± 2 c. ± 1 d. $\pm \sqrt{6i}$
3. The point of intersection between three medians of a triangle is
 a. circumcenter b. orthocenter c. centroid d. in-center
4. For what value of **m** when two vectors $\vec{a} = \vec{i} + \vec{j} - \vec{k}$ and $\vec{b} = -3\vec{i} - m\vec{j} + 12\vec{k}$ are collinear then m is equal to:
 a. - 3 b. 5 c. 3 d. - 5
5. The general solution of the trigonometrical equation of $2\cos\theta = 1$ is
 a. $\theta = n\pi \pm \frac{\pi}{6}$ b. $\theta = 2n\pi \pm \frac{\pi}{3}$ c. $\theta = 2n\pi \pm \frac{\pi}{6}$ d. $\theta = n\pi \pm \frac{\pi}{3}$
6. The value of $\lim_{x \rightarrow \infty} \frac{5x - 6}{\sqrt{4x^2 + 6}}$
 a. ∞ b. $\frac{\infty}{\infty}$ c. $\frac{5}{4}$ d. $\frac{5}{2}$
7. $\frac{d}{dx} [\cos(ax + b)]$ is equal to
 a. $\cos(ax + b)$ b. $-\cos(ax + b)$
 c. $-\sin(ax + b)$ d. $\sin(ax + b)$
8. A function $f(x) = \begin{cases} \frac{2x^2 - 32}{x - 4} & \text{for } x \neq 4 \\ k & \text{for } x = 4 \end{cases}$, the value of **k** so that **f(x)** is continuous at $x = 4$. The value of **k** is
 a. 4 b. 8 c. 12 d. 16
9. Which one of the following is the value of $\int \frac{1}{x \log x} dx = ?$
 a. $\frac{1}{x} + c$ b. $\frac{1}{\log x} + c$ c. $\log x + c$ d. $\log(\log x) + c$
10. The distribution in which mean = 60 and mode = 65, will be
 a. positively skewed b. negatively skewed c. symmetrical d. none
11. The first iteration root of the equation $f(x) = x^2 - 4 = 0$ by using Newton Raphson's method with initial guess 1 will be:
 a. 1.5 b. 2.5 c. 3.5 d. 4.5

OR

If a ball is thrown vertically upwards with velocity 30ms^{-1} , then what is the maximum height attained by the ball $g = 10 \text{ms}^{-2}$.

- a. 15 b. 20m c. 30 m d. 45 m

Group 'B'

[8 × 5 = 40]

12. a. If **p** and **q** be the statements, prove that $p \vee \sim(p \wedge q)$ is a tautology.

2

- b. Find the domain and the range of $y = \sqrt{x^2 - 2x - 8}$. 3
[2 + 1]
13. a. Examine whether the function $f(x) = 10^x - 10^{-x}$ is even or odd. 2
 b. Show that
- $$\begin{vmatrix} a - b - c & 2a & 2a \\ 2b & b - c - a & 2b \\ 2c & 2c & c - a - b \end{vmatrix} = (a + b + c)^3.$$
- 3
14. a. Find the equation of the bisector of the angle between the lines $3x - 2y = 5$ and $6x + 2y + 15 = 0$ which contains the origin. 2
 b. Prove that: $2 \tan^{-1} \frac{1}{3} + \tan^{-1} \frac{1}{7} = \frac{\pi}{4}$. 3
15. a. Solve: $\tan x + \cot x = 2 \operatorname{cosec} x$. [1 + 2]
 b. Show that the vectors $5\vec{a} + 6\vec{b} + 7\vec{c}$, $7\vec{a} - 8\vec{b} + 9\vec{c}$ and $3\vec{a} + 20\vec{b} + 5\vec{c}$ are coplanar, where \vec{a} , \vec{b} , \vec{c} are any three vectors. 3
16. a. If A and B are two independent events with $P(A) = \frac{2}{3}$ and $P(B) = \frac{3}{5}$, find
 i. $P(A \cup B)$. 1
 ii. $P(\overline{A \cup B})$. 1
 b. Determine Karl Pearson's coefficient of Skewness from the following frequency distribution: 3
- | | | | | | |
|---------------|--------|---------|---------|---------|---------|
| Daily Sales: | 0 - 10 | 10 - 20 | 20 - 30 | 30 - 40 | 40 - 50 |
| No. of shops: | 2 | 9 | 10 | 7 | 2 |
17. a. Discuss the continuity of functions $f(x) = \begin{cases} 2x^2 + 1 & \text{for } x \leq 2 \\ 4x + 1 & \text{for } x > 2 \end{cases}$ at a point $x = 2$. 2
 b. Evaluate: $\lim_{x \rightarrow 0} \frac{\tan x - \sin x}{x^3}$. 3
18. a. Evaluate: $\int (\operatorname{asin} x - b)^3 \operatorname{cos} x \, dx$. 2
 b. Show that the rectangle of largest possible area for a given perimeter is a square. 3
19. a. Using Newton Raphson method, find the square roots of 612, correct to 5 places of decimal. 2
 b. Given $I = \int_1^5 x^4 \, dx$
 i. Estimate the value of I using trapezoidal rule with 4 sub-intervals.
 ii. Determine the error of estimation if the exact value of I is 624.80. Also find the error bound for the estimated value. 3

OR

- a. The sum of the forces is 18N and their resultant which is perpendicular to the smaller of two forces is 12N. Find the magnitude of the forces. 2
- b. A cat seeing a mouse at a distance of 15m. before it, starts from rest with an acceleration of 2 m/s^2 and pursues it. If the mouse be moving uniformly with a velocity of 14 m/s, find when and where the cat will catch the mouse. 3

Group 'C'

[3×8=24]

20. a. If $\frac{1 - ix}{1 + ix} = a - ib$, prove that $a^2 + b^2 = 1$. 2
 b. A side of an equilateral triangle is 8 cm. The middle points of its sides are joined to form second equilateral triangle whose middle points in turn are joined forming the third equilateral triangle. If the process continues indefinitely, find the sum of the perimeters of all the triangles. 3
 c. If the equations $x^2 + px + q = 0$ and $x^2 + qx + p = 0$ have a common root, prove that either $p = q$ or $p + q + 1 = 0$. 3

21. a. Find the value of λ so that the three points with position vectors $-\vec{i} - \vec{j} - \vec{k}$, $\vec{i} + 3\vec{j} + 2\vec{k}$ and $5\vec{i} + \lambda\vec{j} + 8\vec{k}$ are collinear. 2
- b. Find the equation to the pair of straight lines joining the origin to the intersection of the straight line $y = mx + c$ and the curve $x^2 + y^2 = a^2$. Prove that they are right angles if $2c^2 = a^2(1 + m^2)$. 3
- c. Show that the angle between two diagonals of a cube is $\cos^{-1}\left(\frac{1}{3}\right)$. 3
22. a. Find $\frac{dy}{dx}$, when $x^2y^2 = \tan(xy)$. 2
- b. Find from first principles, the derivatives of $\frac{1}{2x+3}$. 3
- c. Find the area enclosed by the axis of x and the curve $y = 3x - 5x^2$. 3

Send - Up Examination - 2082

Class: XI

Time: 3 hrs.

F. M.: 75

P.M. : 30

Set: B

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet. [11×1=11]

- The negation of the compound statement $(p \wedge \sim p)$ is
 - $(\sim q \wedge p)$
 - $(\sim q \wedge \sim p)$
 - $(p \wedge \sim p)$
 - $(\sim q \vee \sim p)$
- Which one of the following is the value of $3i^2 + i^3 + 9i^4 - i^7$?
 - i
 - 6
 - 12
 - 1
- Which one of the following is the range of a function $y = \sin^{-1}x$?
 - $-\frac{\pi}{2} \leq x \leq \frac{\pi}{2}$
 - $-1 \leq x \leq 1$
 - $1 \leq y \leq 1$
 - $-\frac{\pi}{2} \leq y \leq \frac{\pi}{2}$
- Which one of the following point passes through the pair line represented by $x^2 - 5xy + 3y^2 = 0$?
 - (2, 3)
 - (0, -3)
 - (-5, 4)
 - (0, 0)
- If $3\vec{i} + \vec{j} - \vec{k}$ and $-\lambda\vec{i} - 4\vec{j} - 4\vec{k}$ are collinear vectors, find the value of λ .
 - 3
 - 12
 - 4
 - 16
- If $P(A) = 0.5$, $P(B) = 0.4$ and $P(A \cup B) = 0.8$ then $P(A \cap B)$ is
 - 0
 - 0.1
 - 0.2
 - 0.3
- Which one is the derivative of e^{4x}
 - $4e^{4x}$
 - $4x$
 - e^{4x}
 - $e^{4x/4}$
- Which one of the following is the derivative of $\cos x$ with respect to $\sin x$?
 - $\cot x$
 - $\sin x \cdot \cos x$
 - $-\tan x$
 - $-\cot x$
- Which one of the following is the integral of $\int \frac{dx}{1 - e^x}$?
 - $\log(e^x - 1) + c$
 - $-\log(e^x - 1) + c$
 - $\log(1 - e^x) + c$
 - $\log(1 - e^{-x}) + c$
- Which one of the following is the area bounded by curve $x = f(y)$, y -axis and the two abscissary = 1 and $y = 4$?
 - $\int_4^1 f(y) dy$
 - $\int_1^4 f(y) dy$
 - $\int_1^4 f(y) dy$
 - $\int_4^1 f(y) dy$

11. Which one of the following is the formula due to Newton Raphson method to solve an equation $f(x) = 0$ in fourth iteration?

- a. $x_4 = x_2 - \frac{f(x_3)}{f'(x_3)}$ b. $x_4 = x_4 - \frac{f(x_4)}{f'(x_4)}$ c. $x_4 = x_3 - \frac{f(x_3)}{f'(x_3)}$ d. $x_4 = x_2 - \frac{f(x_3)}{f'(x_3)}$

OR

If **R** be the resultant of two forces **P** and **Q** ($P > Q$) then **R** is

- a. nearer to **P** b. nearer to **Q** c. perpendicular to **P** d. perpendicular to **Q**

Group 'B'

[8 × 5 = 40]

19. a. If **p** and **q** be the statements then prove that $\mathbf{p} \vee \sim (\mathbf{p} \wedge \mathbf{q})$ is a tautology. 2
 b. If **A** and **B** and **C** are subsets of universal set **U** show that $\mathbf{A} - (\mathbf{B} \cap \mathbf{C}) = (\mathbf{A} - \mathbf{B}) \cup (\mathbf{A} - \mathbf{C})$. 2
 c. Write $|2\mathbf{x} + 1| \leq 3$ without using absolute value sign. 1

20. a. What is the probability of drawing a heart or an ace from a deck of 52 cards? 2
 b. Show that:

$$\begin{vmatrix} b+c & a & b \\ c+a & c & a \\ a+b & b & c \end{vmatrix} = (a+b+c)(a-c)^2.$$
3

21. a. If the equations $\mathbf{x}^2 + \mathbf{px} = \mathbf{q} = \mathbf{0}$ and $\mathbf{x}^2 + \mathbf{qx} + \mathbf{p} = \mathbf{0}$ have a common root prove that either $\mathbf{p} = \mathbf{q}$ or $\mathbf{p} + \mathbf{q} + \mathbf{1} = \mathbf{0}$. 2

- b. If $\tan^{-1}\mathbf{x} + \tan^{-1}\mathbf{y} + \tan^{-1}\mathbf{z} = \pi$ prove that $\mathbf{x} + \mathbf{y} + \mathbf{z} = \mathbf{xyz}$. 3

22. a. If **p** is the length of perpendicular dropped from origin to the line $\frac{\mathbf{x}}{\mathbf{a}} + \frac{\mathbf{y}}{\mathbf{b}} = 1$ then prove that

$$\frac{1}{\mathbf{a}^2} + \frac{1}{\mathbf{b}^2} = \frac{1}{\mathbf{p}^2}.$$
2

- b. i. Write the general second degree equation that represent pair of straight lines. 1
 ii. Write two equations/lines represented by $\mathbf{xy} - 3\mathbf{x} + 2\mathbf{y} - 6 = 0$. 1
 iii. Find the equation of the bisectors of the angle between lines given by $2\mathbf{x}^2 - 6\mathbf{xy} - \mathbf{y}^2 = 0$. 1

23. a. Express $\vec{\mathbf{r}} = (8, -5)$ as the linear combination of $\vec{\mathbf{a}} = (2, -3)$ and $\vec{\mathbf{b}} = (-1, -2)$. 2

a. In a given frequency distribution

x	10-20	20-30	30-40	40-50	50-60
f	5	12	20	11	2

- Calculate: i. mean 1
 ii. standard deviation 1
 iii. if mode is 34.7 show that coefficient of skewness is -0.11. 1

24. a. If $f(\mathbf{x}) = 3\mathbf{x} - 2$ then show that $\lim_{\mathbf{x} \rightarrow 3} f(\mathbf{x}) = 7$. 1

- b. Evaluate: $\lim_{\mathbf{x} \rightarrow \mathbf{y}} \frac{\tan \mathbf{x} - \tan \mathbf{y}}{\mathbf{x} - \mathbf{y}}$. 2

- c. Find the value of **k** so that $f(\mathbf{x}) = \begin{cases} \mathbf{kx}^2 & \text{if } \mathbf{x} \leq 2 \\ 3 & \text{if } \mathbf{x} > 2 \end{cases}$ is continuous at $\mathbf{x} = 2$. 2

25. a. Use implicit differentiation to obtain $\frac{d\mathbf{y}}{d\mathbf{x}}$ of $\mathbf{x}^2 + \mathbf{y}^2 = \mathbf{x}^2\mathbf{y}^2$. 2

- b. Write the difference between derivative and anti-derivative. 1

- c. Integrate $\int \mathbf{x}^2 \mathbf{e}^{\mathbf{x}} d\mathbf{x}$

26. a. Apply method of successive bisection to find the square root of 123 within 2 places of decimal in (11, 12). 3

- b. Approximate $\int_1^4 5\mathbf{x} d\mathbf{x}$, $\mathbf{n} = 3$ using composite trapezoidal rule correct to 3 places of decimals. 2

OR

- a. The resultant of two forces P and Q is R. If Q is doubled the new resultant force is perpendicular to P_1 prove that $Q = R$. 3
- b. A bullet fired into a target loss half of its velocity after penetrating 3cm. How much further it will penetrate? 2

Group 'C'

[3×8=24]

22. a. Define a complex number. If $\frac{1 - ix}{1 + ix} = a - ib$ prove that $a^2 + b^2 = 1$. 2
- b. Find the sum of the infinite series $\frac{1}{2} + \frac{4}{2^2} + \frac{7}{2^3} + \frac{10}{2^4} + \dots$ 3
- c. Show that the angle between two diagonals of a cube is $\cos^{-1}\left(\frac{1}{3}\right)$. 3
23. a. Define collinear vectors and find the value of λ if $3\vec{i} + \vec{j} - \vec{k}$ and $\lambda\vec{i} - 4\vec{j} + 4\vec{k}$ are collinear. 3
- b. Solve for general values: $\sin x + \sqrt{3} \cos x = \sqrt{2}$. 2
- c. If $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = \frac{1}{1-x}$, ($x \neq 1$), show that $(f \circ f)\left(\frac{1}{2}\right) = -1$. 3
22. a. Find from first principle the derivative of $\sin(2x + 3)$. 4
- b. Write one application of definite integration. Also find the area between the curve $y^2 = 4x$ and line $y = x$. [1 + 3]

NEB-Model Questions – 2078

Time: 3 hrs.

F.M.: 75

P.M.: 27

Attempt all the questions

Group 'A'

(11 × 1 = 11)

Rewrite the correct option in your answer sheet:

- 1) Which of the following is a statement?
(a) The fishes are beautiful (b) Study mathematics.
(c) x is a capital of country y. (d) Water is essential for health.
- 2) The value of $\sqrt{-16} \times \sqrt{-25}$ is
(a) -20 (b) -20i (c) 20i (d) 20
- 3) If A is a square matrix then which of the following is always true?
(a) $|A| = 0$ (b) $|A| = |A^T|$ (c) $|A| = I$ (d) $|A| = -|A^T|$
- 4) The a + ib form of complex number $\frac{2 - 36i}{2 + 3i}$ is
(a) $8 + 6i$ (b) $-8 - 6i$ (c) $8 - 6i$ (d) $-8 + 6i$
- 5) The cosine of the angle between the vectors $\vec{a} = \vec{i} - 2\vec{j} + 3\vec{k}$ and $\vec{b} = \vec{i} + 3\vec{j} + 3\vec{k}$ is
(a) $\frac{1}{14}$ (b) 14 (c) $\sqrt{14}$ (d) 196
- 6) The value of $\tan^{-1}(1/2) + \tan^{-1}(1/3)$ is
(a) $\frac{\pi}{2}$ (b) $\frac{\pi}{4}$ (c) $\frac{\pi}{3}$ (d) $\frac{\pi}{6}$
- 7) A mathematical problem is given to three students Sumit, Sujan and Rakesh whose chance of solving it are $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{a}$ respectively. The probability that the problem is solved is $\frac{3}{4}$? The possible values of a are
(a) $\frac{9}{2}$ (b) 4 (c) $\frac{1}{4}$ (d) $\frac{1}{8}$

- 8) $\lim_{\theta \rightarrow 0} \frac{\sin \theta}{\theta}$ is equal to
 (a) 0 (b) ∞ (c) 1 (d) $\frac{0}{0}$
- 9) The derivatives of $\frac{4x^2 + 3}{3x^2 - 2}$ is
 (a) $\frac{-34x}{(3x^2 - 2)^2}$ (b) $\frac{30x^2}{3x^2 - 2}$ (c) $\frac{-32x}{(3x^2 - 2)^3}$ (d) $\frac{-31x}{(3x^2 - 2)^2}$
- 10) By Newton's Raphson, the positive root of $x^3 - 18 = 0$ in (2, 3) is
 (a) 2.666 (b) 2.621 (c) 2.620 (d) 2.622
- 11) Two forces acting at an angle of 45° have a resultant equal to $\sqrt{10} N$, if one of the forces be $\sqrt{2} N$, what is the other force?
 (a) 1N (b) 2N (c) 3N (d) 4N

OR

A first degree equation in x and y always represents a

- (a) circle (b) straight line (c) pair of straight lines (d) Parabola

Group B

Give short answer to the following questions.

(8 × 5 = 40)

- 12) (a) If a, b, c are in H.P. prove that $\frac{b+a}{b-a} + \frac{b+c}{b-c} = 2$. (3)
 (b) If A.m., G. m. and H.M. exists between any two unequal positive numbers show that $AM \times H.M. = (G.m.)^2$
- 13) (a) If A and B are the subsets of universal set U. Prove that $\overline{A \cup B} = \overline{A} \cap \overline{B}$.
 (b) Find the domain and range of $y = \sqrt{x} - 2$
- 14) (a) Solve: $\sin \theta - \sqrt{3} \cos \theta = 2$ ($-2\pi < \theta < 2\pi$) (3)
 (b) Express $r^{\rightarrow} = (4, 7)$ as the linear combination of $a^{\rightarrow} = (5, -4)$ and $b^{\rightarrow} = (-2, 5)$ (2)
- 15) Calculate the appropriate measure of Skewness for the data below.

Class	0-10	10-20	20-30	30-40	40-50	50-60
No of workers	10	12	25	35	40	50

- 16) Define different types of discontinuity of a function. Also write the condition for increasing, decreasing and concavity of function. (2+3)
- 17) Evaluate: $\int \frac{x^2 dx}{\sqrt{a^2 - x^2}}$
- 18) Define Trapezoidal rule. Evaluate using Trapezoidal rule for $\int \frac{dx}{1+x} n = 4$.
- 19) State sine law and use it to prove Lami's theorem.

Group 'C'

(3 × 8 = 24)

Give long answer to the following questions.

- 20) (a) (i) Find the square root of $8 + 6i$. (2)
 (ii) Prove that: $\begin{vmatrix} 1+x & 1 & 1 \\ 1 & 1+y & 1 \\ 1 & 1 & 1+z \end{vmatrix} = xyz \left(\frac{1}{x} + \frac{1}{y} + \frac{1}{z} + 1 \right)$. (4)
 (b) Verify that: $|x + y| \leq |x| + |y|$ with $x = 2$ and $y = -3$. (2)

- 21) (a) The single equation of pair of lines is $2x^2 + 3xy + y^2 + 5x + 2y - 3 = 0$
- (i) Find the equation of pair straight lines represented by the single equation. (4)
- (ii) Are the pair of lines represented by the given equation passes through origin? Write with reason. (1)
- (iii) Find the point of intersection of the pair of lines. (2)
- (b) Evaluate: $\lim_{x \rightarrow 0} \frac{e^{ax} - e^{bx}}{x}$. (1)
- 22) (a) Distinguish between derivative and anti-derivative of a function. Write their physical meanings and illustrate with example in your context. Find, the coefficient of $\log \sin x$ with respect to x . (1+ 2+2)
- (b) Find the area bounded by the y – axis, the curve $x^2 = 4(y - 2)$ and the line $y = 11$. (3)

NEB Examination – 2078

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

(11 × 1 = 11)

Rewrite the correct option in your answer sheet.

- 1) Which of the following is not a statement?
 a. $2 + 4 = 7$ b. Open the door c. There is no one. d. $4 > 1$
- 2) The value of $\frac{1}{1} - \frac{1}{1^2} + \frac{1}{1^3} - \frac{1}{1^4}$ is
 a. - 1 b. 0 c. 1 d. i
- 3) In ΔABC , if $A = 30^\circ$, $B = 45^\circ$, $b = 4$ then $c =$
 a. $2(\sqrt{3} + 1)$ b. $\sqrt{3} - 1$ c. $\sqrt{6}$ d. None
- 4) A matrix $\begin{pmatrix} 0 & k+2 \\ 5 & 0 \end{pmatrix}$ is a skew-symmetric matrix if $k =$
 a. -2 b. - 7 c. - 5 d. -3
- 5) The angle between the vectors $\vec{i} + \vec{j} - 2\vec{k}$ & $\vec{b} = 2\vec{i} - \vec{j} - \vec{k}$ is
 a. $\frac{\pi}{6}$ b. $\frac{\pi}{3}$ c. $\frac{\pi}{2}$ d. $2\frac{\pi}{3}$
- 6) The empirical relation between mean, mode and median is
 a. $\bar{x} = 3M_d - 2M_o$ b. $M_o = 3M_d - 2\bar{x}$ c. Mean = Mode d. none
- 7) The probability of a sure event is
 a. 0 b. 1 c. $\frac{1}{2}$ d. all
- 8) $\lim_{x \rightarrow 0} \frac{a^x - 1}{x}$ is equal to
 a. 1 b. $a^x \log a$ c. $\log a$ d. - $\log a$.
- 9) The derivative of $(a + \sqrt{x})(a - \sqrt{x})$ is
 a. - 1 b. 0 c. 1 d. $\frac{1}{\sqrt{x}}$
- 10) The centre of a circle of equation $x^2 + y^2 + 2gx + 2fy + c = 0$ is
 a. $(-f, -g)$ b. (g, f) c. $(-g, -f)$ d. None
- 11) A car moving with a velocity of 15ms^{-1} has a uniform acceleration of 2ms^{-2} . If it covers a distance of 54m in t seconds then t is
 a. 3 sec. b. 6 sec c. 12 sec. d. 18 sec.

Group 'B'

(8 × 5 = 40)

Write short answer to the following questions.

- 12) Write one necessary condition for a function to exist its inverse. If a function $f: \mathbb{R} \rightarrow \mathbb{R}$ is defined by $f(x) = 2x + 3$ then find $f^{-1}(x)$.
- 13) Prove that the following relations if AM be arithmetic mean, GM be geometric mean and HM be harmonic mean :
 (i) $(GM)^2 = AM \times HM$ ii) $AM > GM > HM$
- 14) If p and p' be the length of perpendiculars from the origin up on the straight lines whose equation are $x \sec \theta + y \operatorname{cosec} \theta = a$ and $x \cos \theta - y \sin \theta = a \cos 2\theta$.
 Prove that $4p^2 + (p')^2 = a^2$
- 15) Determine Karl Pearson's coefficient of Skewness from the following frequency distribution

Daily sales	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Numbers of shops	2	9	10	7	2

- 16) i) Using first principle, find the derivative of $\sin x$. 3
 ii) Prove: $\frac{a - b \cos C}{c - b \cos A} = \frac{\sin C}{\sin A}$ 2
- 17) Evaluate: $\lim_{x \rightarrow \theta} \frac{x \cot \theta - \theta \cot x}{x - \theta}$
- 18) Solve the equation $x^3 - 9x + 1 = 0$, by bisection method for the root lying between 2 and 3, correct to three significant figures.
- 19) Two forces of magnitude $3P, 2P$ respectively have resultant R . If the first force be double the magnitude of resultant is doubled. Find the angle between forces.

Group 'C'

(3 × 8 = 24)

Give long answer to the following questions.

- 20) a. Find the cube roots of unity. Also establish the properties of cube roots of unity. 2+4
 b. State & prove triangle's inequality for any two real numbers x and y . 2
- 21) a. List the criteria for local maximum and local minimum for the function and find
 Local maximum and minimum of the function $f(x) = 4x^3 - 6x^2 - 9x + 1$ on $(-1, 4)$ 6
 b. Construct truth table for the compound statement $p \Rightarrow (q \vee p)$ 2
- 22) a. Compute the following integrals using trapezoidal rule. 4

$$\int_0^1 \frac{dx}{1+x}, n = 4$$

 b. Find the area of the region between the curves $y = x^2$ & $y = 2x$. 4

NEB Examination – 2079

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

(11 × 1 = 11)

Rewrite the correct option in your answer sheet.

1. The contrapositive of $p \Rightarrow q$ is:
 a. $q \Rightarrow p$ b. $\sim p \Rightarrow q$ c. $\sim q \Rightarrow \sim p$ d. $q \Rightarrow \sim p$
2. The value of $(0, 1)^7$ is:
 a. 1 b. i c. - 1 d. - i

3. If s is a perimeter and p is a semi - perimeter of a triangle ABC, then:
 a. $s = \frac{a+b+c}{2}$ b. $p = a+b+c$ c. $p = \frac{a+b+c}{2}$ d. all
4. If $A = 30^\circ$, $B = 45^\circ$, $a = 6\sqrt{2}$ of ΔABC , then the value of b is:
 a. 6 b. 12 c. 24 d. $12\sqrt{3}$
5. If vectors $3\vec{i} - 4\vec{j} + 7\vec{k}$ and $2\vec{i} + 5\vec{j} + m\vec{k}$ are orthogonal, then the value of m is:
 a. 0 b. 1 c. 2 d. 3
6. The equation of parabola with the vertex at the origin and the directrix $y - 2 = 0$ is:
 a. $y^2 - 8y = 0$ b. $x^2 - 8y = 0$ c. $y^2 + 8y = 0$ d. $x^2 + 8y = 0$
7. The chance that A can solve the problem is $\frac{1}{4}$, the chance that B can solve the problem is $\frac{2}{3}$. The probability that A can solve the problem but B cannot is:
 a. $\frac{1}{12}$ b. $\frac{1}{6}$ c. $\frac{1}{2}$ d. $\frac{1}{4}$
8. The function $f(x) = \frac{3x - 1}{x^2 - x}$ is discontinuous when:
 a. $x = 0, 1$ b. $x = 1$ c. $x = 1, \frac{1}{3}$ d. $x = 0, -1$
9. If $f'(a) = 0$ and $f''(a) < 0$, then $f(x)$ has:
 a. minimum value at $x = a$ b. maximum value at $x = a$
 c. both minimum and maximum value at $x = a$ d. neither minimum nor maximum value at $x = a$.
10. How many iterations do you need to get the root if you start with $a = 1$ and $b = 2$ and the tolerance is 10^{-4} ?
 a. 10 b. 12 c. 13 d. 14
11. If the forces P, Q and R are in equilibrium, then the sum of forces is:
 a. - 1 b. 1 c. 2 d. 0

Group 'B'

(8 × 5 = 40)

Write short answer to the following questions.

12. A function $f(x) = -x^2$ is given. Answer the following question for the function $f(x)$. (5×1 = 5)
 i. What is the algebraic nature of the function? ii. Write the name of the locus of the curve.
 iii. Write the vertex of the function. iv. Write any one property for sketching the curve.
 v. Write the domain of the function.
13. a. If G is the geometric mean between a and b show that

$$\frac{1}{G^2 - a^2} + \frac{1}{G^2 - b^2} = \frac{1}{G^2}$$
 2
- b. Prove that: $\begin{vmatrix} 1+a_1 & a_2 & a_3 \\ a_1 & 1+a_2 & a_3 \\ a_1 & a_2 & 1+a_3 \end{vmatrix} = 1+a_1 + a_2+a_3$ 3
14. a. If $(a + b + c)(b+c - a) = 3bc$, show that $A = 60^\circ$. 3
 b. Find the cosine of the angle between the vectors $\vec{i} - 2\vec{j} + 3\vec{k}$ and $\vec{i} + 3\vec{j} + 2\vec{k}$. 2
15. Compute the appropriate coefficient of skewness from the following frequency distribution. 5
- | | | | | | |
|----------------|-----------|-----------|-----------|-----------|-----------|
| Income group | Below 100 | 100 - 200 | 200 - 300 | 300 - 400 | 400 - 500 |
| No. of workers | 8 | 16 | 30 | 20 | 6 |
16. a. Evaluate: $\lim_{x \rightarrow a} \frac{\sqrt{2x} - \sqrt{3x - a}}{\sqrt{x} - \sqrt{a}}$ 3
 b. Find the derivative of $\cos(ax^2 + bx + c)$. 2

17. Evaluate: $\int_0^{\pi} x^2 \cos x \, dx$ 5
18. Given $I = \int_0^4 x^2 \, dx$.
- Calculate the exact value of I using the fundamental theorem of calculus. 1
 - Approximate the value of I using Simpson's rule with 4 sub - intervals. 3
 - Determine the error. 1
19. The resultant of two forces P and Q acting at an angle α is equal to $(2m + 1)\sqrt{P^2 + Q^2}$. When they act at angle $(90^\circ - \alpha)$ the resultant is $(2m - 1)\sqrt{P^2 + Q^2}$. Prove that $\tan \alpha = \frac{m - 1}{m + 1}$. 5

Group 'C'

(3 × 8 = 24)

Give long answer to the following questions.

20. a. Find the domain and range of the function $f: \mathbb{R} \rightarrow \mathbb{R}$ defined by $f(x) = \frac{x^2 - 9}{x - 3}$ 3
- b. Sketch the graph of the function $y = \frac{1}{x + 2}$ 3
- c. Write the polar form of $z = -\frac{1}{2} + \frac{\sqrt{3}}{2}i$ 2
21. a. The single equation of pair of lines is $6x^2 - xy - 12y^2 - 8x + 29y - 14 = 0$
- Find the equation of pair of lines represented by the single equation. 4
 - Are the pair of lines represented by the given equation passes through origin? 1
 - Find the point of intersection of the pair of lines. 2
- b. Write down the formula for projection of \vec{a} on \vec{b} . 1
22. a. Find, from first principles, the differential coefficients of $\cos 2x$. 4
- b. Obtain the area bounded by the curves $y = x^2$ and $y = 2x$. 4

NEB Examination – 2080

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks..

Attempt all questions.

Group 'A'

[11 × 1 = 11]

Rewrite the correct option in your answer sheet.

1. Let p and q be two simple statements. If p is true and q is false, then which one of the following compound statements is true?
- $p \wedge q$
 - $p \vee q$
 - $p \Rightarrow q$
 - $p \Leftrightarrow q$
2. What is the sum of the infinite geometric series $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots$?
- 4
 - 3
 - 2
 - 1
3. The general solution of the trigonometric equation $2\cos x - 1 = 0$ is:
- $x = 2n\pi \pm \frac{\pi}{3}$
 - $x = n\pi \pm \frac{\pi}{3}$
 - $x = n\pi + \frac{\pi}{3}$
 - $x = n\pi + (-1)^n \cdot \frac{\pi}{6}$

4. The two straight lines represented by $ax^2 + 2hxy + by^2 = 0$ are at right angles if
 a. $h^2 - ab = 0$ b. $h^2 + ab = 0$ c. $a - b = 0$ d. $a + b = 0$
5. If A and B are two independent events with $P(A) = \frac{2}{3}$ and $P(B) = \frac{3}{5}$, then the value of $P(A \cap B)$ is:
 a. $\frac{2}{5}$ b. $\frac{19}{15}$ c. $\frac{1}{15}$ d. $\frac{2}{15}$
6. If $3\vec{i} + \vec{j} - \vec{k}$ and $\lambda\vec{i} - 4\vec{j} + 4\vec{k}$ are collinear vectors, then the value of λ is:
 a. 12 b. -12 c. $-\frac{1}{4}$ d. -4
7. What is the value of $\lim_{x \rightarrow 0} \frac{\sin 2x}{x}$?
 a. 0 b. 1 c. 2 d. does not exist.
8. The second derivative of $y = \frac{3}{x^2}$ is:
 a. $\frac{3}{2x^3}$ b. $-\frac{6}{x^3}$ c. $\frac{6}{x^4}$ d. $\frac{18}{x^4}$
9. What is the area enclosed by $y = 3x$, the x-axis and the lines $x = 0$ and $x = 4$?
 a. 24 sq.units b. 48 sq. units c. 12 sq. units d. 16 sq.units.
10. Let $f(x) = 30 - x^2$. Which one of the following is true for this function?
 a. The graph of $f(x)$ is always increasing. b. The graph of $f(x)$ is always decreasing.
 c. The graph of $f(x)$ is concave upward for all x. d. The graph of $f(x)$ is concave downward for all x.
11. Two forces of magnitudes P and 2P Newtons acting at a point have the resultant of $\sqrt{3}$ P Newton. What is the angle between the two given forces?
 a. 120° b. 90° c. 60° d. 30°

OR

The first iteration root of the equation $f(x) = x^2 - 6 \ln x - 3 = 0$ ($2 \leq x \leq 3$) by using bisection method is:

- a. -0.8623 b. 0.8623 c. 0.6832 d. 0.8023

Group 'B'

[8 × 5 = 40]

12. a. Examine whether the function $f(x) = x \sin x + \cos x$ is odd, even or neither. 2
 b. If $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = \frac{1}{1-x}$, ($x \neq 1$), show that $(f \circ f)\left(\frac{1}{2}\right) = -1$. 3
13. a. Find the absolute value and conjugate of the complex number $1 + \sqrt{3}i$. 2
 b. Let $z = 1 + 2i$ and $w = 2 - i$. Verify that $|z + w| \leq |z| + |w|$. 3
14. a. Write the domains of $y = \sqrt{x-3}$ and $y = \cos^{-1}x$. 2
 b. Find the general solution of $\tan 2x + \tan x = 0$. Hence find the values of x in $\left(\frac{-\pi}{2}, \frac{\pi}{2}\right)$. [2+1]
15. a. Examine whether the vectors $\vec{a} = \vec{i} - 2\vec{j} + \vec{k}$, $\vec{b} = 2\vec{i} + \vec{j} - \vec{k}$ and $\vec{c} = 7\vec{i} - 4\vec{j} + \vec{k}$ are linearly dependent or independent. 3
 b. Express $\vec{r} = (4, 7)$ as the linear combination of $\vec{a} = (5, -4)$ and $\vec{b} = (-2, 5)$. 2
16. a. In a certain distribution, the results obtained are Mean = 45, Median = 48 and the coefficient of Skewness = -0.4. Find the standard deviation and the coefficient of variation. 2
 b. Two coins are tossed simultaneously. Find the sample space. Find the probability of getting (i) both heads (ii) at least one head. 3

17. a. Write the formula used to find the derivative of $y = \frac{f(x)}{g(x)}$. 1
- b. Find the derivative of $y = \frac{x^2}{1-x^2}$. 2
- c. Show that $\frac{dy}{dx} = \frac{1-y \cos(xy)}{1+x \cos(xy)}$ when $x-y = \sin(xy)$. 2
18. a. Let $f(x) = \begin{cases} 3x^2-1 & \text{for } x \leq 2 \\ 4x+3 & \text{for } x > 2. \end{cases}$
- i. Find the limit of $f(x)$ at $x = 2$. 2
- ii. Is $f(x)$ continuous at $x = 2$? 1
- b. Evaluate: $\int_0^1 (2x^2 + 3) dx$ 2
19. Given $I = \int_0^2 x^3 dx$
- a. Estimate the value of I using trapezoidal rule with 4 sub-intervals. 3
- b. Find the approximate value of I using Simpson's $\frac{1}{3}$ rule with 4 sub-intervals. 2

OR

- a. The resultant of two forces P and Q is equal to $\sqrt{3} Q$ and making an angle of 30° with the direction of P ; show that P is either equal to Q or is double of Q . 3
- b. A stone is dropped from a rising balloon at a height of 300 m above the ground and it reaches the ground in 10 seconds. Find the velocity of the balloon at the moment, when the stone was dropped. 2

Group 'C'

[3 × 8 = 24]

20. a. Construct truth table for $(\sim p) \vee (\sim q)$. 2
- b. Write $|2x - 1| \leq 5$ without using absolute value sign and simplify your answer. 2
- c. Prove that: $\begin{vmatrix} 1+a_1 & a_2 & a_3 \\ a_1 & 1+a_2 & a_3 \\ a_1 & a_2 & 1+a_3 \end{vmatrix} = 1 + a_1 + a_2 + a_3$. 4
21. a. Show that the points $(1, 2, 3)$, $(-1, -2, -1)$, $(2, 3, 2)$ and $(4, 7, 6)$ are the vertices of a parallelogram. 3
- b. Find the angle between the two lines represented by $2x^2 + 7xy + 3y^2 = 0$. 2
- c. Determine the equations of the lines represented by $x^2 + 6xy + 9y^2 + 4x + 12y - 5 = 0$. 3
22. a. Find, from definition, the derivative of $f(x) = 3x^2$. 3
- b. Show that the function $f(x) = x^2 - 3x + 4$ is increasing when $x = 2$ and is decreasing when $x = 1$. 2
- c. Calculate the integral $\int_0^1 \frac{dx}{1+x^2}$. 3

NEB Examination – 2081

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks..

Attempt all questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11 × 1 = 11]

1. The statement $p \vee \sim p$ is a
- a. contradiction b. tautology c. contrapositive d. none of them

2. Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = \frac{1 - 3x}{2}$. Then f^{-1} is equal to
- a. $\frac{1 + 3x}{2}$ b. $\frac{2x + 1}{3}$ c. $\frac{1 - 2x}{3}$ d. $\frac{1 - 3x}{2}$
3. The domain of the function $y = 4\cos^{-1}x$ is
- a. $-\frac{1}{4} \leq x \leq \frac{1}{4}$ b. $-1 \leq x \leq 1$ c. $-4 \leq x \leq 4$ d. $-\infty < x < \infty$
4. The intersection of $y = 0$ plane and $z = 0$ plane is
- a. x -axis b. y - axis c. z - axis d. yz - plane
5. The unit vector along the direction of $\vec{a} = 2\vec{i} + 2\vec{j} - \vec{k}$ is
- a. $\frac{1}{2}(2\vec{i} + 2\vec{j} - \vec{k})$ b. $\frac{1}{2\sqrt{2}}(2\vec{i} + 2\vec{j} - \vec{k})$ c. $\frac{1}{3}(2\vec{i} + 2\vec{j} - \vec{k})$ d. $\frac{1}{5}(2\vec{i} + 2\vec{j} - \vec{k})$
6. If A and B are two events such that $P(A) = 0.3$, $P(B) = 0.55$ and $P(A \cap B) = 0.25$, then probability of happening only one events A and B is
- a. 0.6 b. 0.5 c. 0.45 d. 0.35
7. The points of discontinuity of the function $f(x) = \frac{x + 1}{(x - 1)(x + 2)}$ are
- a. $x = -1$ and 2 b. $x = -1$ and -2 c. $x = 1$ and -2 d. $x = 1$ and 2
8. If $f(x) = x^2 - \frac{1}{x}$, then $f'(x)$ is equal to
- a. $2x - \ln x$ b. $2x + \frac{1}{x^2}$ c. $2x - \frac{1}{x^2}$ d. $2x + \ln x$
9. The value of $\int_0^{\pi/2} \sin x \, dx$ is
- a. 1 b. -1 c. 0 d. $\frac{\pi}{2}$
10. The area between $y = f(x)$, x - axis and the two ordinates $x = a$, $x = b$ is positive means, the area lies
- a. above the x - axis b. below the x -axis c. right of y -axis d. left of y - axis
11. In the Newton - Raphson method to get an approximate root of an equation, the number of guess number is
- a. one b. two c. three d. four

OR

If R is the resultant of two forces P and Q and if the forces are in equilibrium, then R is equal to

- a. $P + Q$ b. $P - Q$ c. 0 d. $\sqrt{P^2 + Q^2}$

Group 'B'

[8 × 5 = 40]

12. a. If $A \cap B = \phi$, prove that $B \subseteq \bar{A}$. 2
- b. Define one - one function. Find the domain and range of the function $f(x) = \frac{1}{x - 1} \cdot [1 + 2]$
13. a. If H be the harmonic mean between 'a' and 'b' prove that
- $$\frac{1}{H - a} + \frac{1}{H - b} = \frac{1}{a} + \frac{1}{b} \quad 3$$
- b. Using properties of determinants, prove that 2
- $$\begin{vmatrix} 1 + a_1 & a_2 & a_3 \\ a_1 & 1 + a_2 & a_3 \\ a_1 & a_2 & 1 + a_3 \end{vmatrix} = 1 + a_1 + a_2 + a_3.$$
14. a. Find the general solution of the equation $2\cos^2\theta + \sin\theta \cos\theta - \sin^2\theta = 0$. 3
- b. Find the direction cosines of the line passing through the points A (- 1, 2, - 3) and B (4, - 1, 1). 2

15. a. If p and p' be the length of the perpendiculars from the origin upon the straight line whose equations are $x \sec \theta + y \operatorname{cosec} \theta = a$ and $x \cos \theta - y \sin \theta = a \cos 2\theta$, then
- find p and p'
 - show that $4p^2 + p'^2 = a^2$. [2+1]

b. Express $\vec{r} = (8, -5)$ as the linear combination of

$$\vec{a} = (2, -3) \text{ and } \vec{b} = (-1, -2). \quad 2$$

16. a. Calculate the Karl Pearson's coefficient of Skewness from the following data: 3

X	10	11	12	13	14
f	3	12	18	12	3

b. A bag contains 6 white and 3 red balls. Two balls are drawn one after the another with replacement. Find the probability that they are of different color. 2

17. a. What do you mean by indeterminate form?

Evaluate: $\lim_{x \rightarrow \pi/4} \frac{\sec^2 x - 2}{\tan x - 1}$. [1 + 2]

b. Test the continuity or discontinuity of the function $f(x) = \frac{x}{|x|}$ at $x = 0$. 2

18. a. Integrate: $\int \frac{dx}{x \sqrt{x^2 - 9}}$ 3

b. Find $\frac{dy}{dx}$ if $y = \frac{x^2 - 2x}{x + 1}$ 2

19. Given $I = \int_1^5 x^4 dx$

a. Estimate the value of I using trapezoidal rule with 4 sub-intervals.

b. Find the error bound for this estimation.

c. If the exact value of I is 624.80, determine the error.

d. Is the error within the bound? [2+1 + 1 + 1]

OR

a. A stone is dropped into a well and the sound of the splash is heard in 7.7 seconds, if the velocity of sound is 343 m/s, find the depth of the well. ($g = 9.8 \text{ ms}^{-2}$). 3

b. A force equal to 10N is inclined at an angle of 30° to the horizontal; find its resolved parts in horizontal and vertical directions. 2

Group 'C'

[3 × 8 = 24]

20. a. Define conjugate of a complex number. If $x - iy = \sqrt{\frac{1-i}{1+i}}$, prove that $x^2 + y^2 = 1$. 3

b. Examine whether the function $f(x) = \frac{e^x - e^{-x}}{e^x + e^{-x}}$ is odd, even or neither. 2

c. If the quadratic equations $x^2 + px + q = 0$ and $x^2 + p'x + q' = 0$ have a common root, show that it must be either $\frac{pq' - p'q}{q - q'}$ or $\frac{q - q'}{p' - p}$. 3

21. a. Find the direction cosines of two lines which satisfy the relations $l + m + n = 0$ and $2lm - mn + 2nl = 0$. 3

b. If $\tan^{-1}x + \tan^{-1}y + \tan^{-1}z = \frac{\pi}{2}$, prove that $xy + yz + zx = 1$. 2

c. Show that the vectors $5\vec{a} + 6\vec{b} + 7\vec{c}$, $7\vec{a} - 8\vec{b} + 9\vec{c}$ and $3\vec{a} + 20\vec{b} + 5\vec{c}$ are coplanar, where \vec{a} , \vec{b} , \vec{c} are any three vectors. 3

22. a. Find, from definition, the derivative of $\tan(3x - 4)$. 3
 b. Find the area enclosed by the axis of x and the curve $y = 3x - 5x^2$. 2
 c. Find the maximum area of a rectangular plot of land which can be enclosed a rope of length 60 metres. 3

NEB Examination – 2082

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks..

Attempt all questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11 × 1 = 11]

1. The solution set of $|x - 1| = 5$ is
 a. $\{-4, 6\}$ b. $\{-4, -6\}$ c. $\{4, -6\}$ d. $\{4, 6\}$
2. $a^{2\log_a x}$ is equal to
 a. $2x$ b. $2\log_a x$ c. x^2 d. $\frac{2x}{a}$
3. The absolute value of $\frac{1}{(1-i)^2}$ is
 a. 1 b. $\frac{1}{\sqrt{2}}$ c. $\frac{1}{2}$ d. $\sqrt{2}$
4. The general solution of the equation $\sqrt{3}\tan\theta + 1 = 0$ is
 a. $\theta = n\pi - \frac{\pi}{3}$ b. $\theta = n\pi + (-1)^n \frac{\pi}{6}$
 c. $\theta = 2n\pi + \frac{\pi}{3}$ d. $\theta = n\pi - \frac{\pi}{6}$
5. The distance of the point (1, 2, 3) from $x = 0$ plane is
 a. 1 b. 2 c. 3 d. $\sqrt{14}$
6. If $\vec{i} + \vec{j} - 4\vec{k}$ and $-3\vec{i} - \lambda\vec{j} + 12\vec{k}$ are collinear then $\lambda =$
 a. $\frac{1}{3}$ b. $-\frac{1}{3}$ c. 3 d. -3
7. If **A** and **B** are two independent events then $p(A \cup B) =$
 a. $P(A) + P(B)$ b. $P(A) - P(B)$
 c. $P(A) \cdot P(B)$ d. $P(A) + P(B) - P(A) \cdot P(B)$
8. $\lim_{x \rightarrow \infty} \frac{\sqrt{x}}{x+2} =$
 a. $\frac{\infty}{\infty}$ b. ∞ c. 0 d. 1
9. $\frac{dy}{dx}$ of $y = \text{sine}^{ax}$ is
 a. $\text{cos}x e^{ax}$ b. $a \text{sine}^{ax}$ c. $a e^{ax} \text{cose}^{ax}$ d. $a \text{cose}^{ax}$
10. $\int \text{cos}x e^{\text{sine}x} dx =$
 a. $-\text{sine}^{\text{cos}x} + c$ b. $\text{sine}x e^{\text{cos}x} + c$ c. $e^{\text{sine}x} + c$ d. $e^{\text{cos}x} + c$
11. The first iteration root of the equation $f(x) = x^2 - 5$ with initial guess 2 is
 a. .2.25 b. 2.20 c. 2.10 d. 2.32

OR

The resultant of the forces 3N and 4N acting at 0 along the east and north is

- a. 5N b. 1N c. 7N d. 6N

Group 'B'

[8 × 5 = 40]

12. a. Construct the truth value of compound statement $(\sim p \wedge q) \Rightarrow (p \vee q)$. 2
 b. Define union of two sets and prove $A - (B \cup C) = (A - B) \cap (A - C)$ 3
13. a. Define a bijective function. If $f : A \rightarrow B$ where $A = \{-1, 0, 2\}$ and $B = \{0, 1, 4\}$ defined by $f(x) = x^2$, then show that $f(x)$ is bijective or not. [1+2]
 b. Prove that $f(x) = 3 + 5x$ is increasing for all $x \in \mathbb{R}$. 2
14. a. Prove that: $\tan^{-1}x + \tan^{-1}y + \tan^{-1}z = \tan^{-1} \frac{x+y+z-xyz}{1-yz-zx-xy}$. 3
 b. Find the distance between two parallel lines $y = 2x + 4$ and $2x - y + 9 = 0$. 2
15. a. Determine the lines represented by $x^2 + 2xy + y^2 - 2x - 2y - 15 = 0$. 3
 b. Express $\vec{r} = (4, 7)$ as the linear combination of $\vec{a} = (5, -4)$ and $\vec{b} = (-2, 5)$. 2

16. Calculate mean, mode, standard deviation and Pearson's coefficient of Skewness from given frequency distribution. 5

Investment	0-20	20-30	30-40	40-50	50-60
No. of comp	5	12	20	11	2

17. a. Write the indeterminate form of $\lim_{x \rightarrow y} \frac{\sin x - \sin y}{x - y}$ and evaluate it. 2
 b. Show that function $f(x) = \begin{cases} 2x+1 & \text{for } x < 1 \\ 3 & \text{for } x = 1 \\ 3x & \text{for } x > 1 \end{cases}$ is continuous at $x = 1$. 3
18. a. Find from definition the derivative of $\sqrt{2x+3}$. 3
 b. Integrate: $\int (a \sin x - b)^2 \cos x \, dx$. 2
19. a. Apply the method of successive bisection to find the square root of 123. Within 2 places of decimal in (11,12). 3
 b. By using composite trapezoidal rule evaluate $\int_1^5 x^4 \, dx$ for $n = 4$. 2

OR

- a. The resultant of two forces P and Q is R if Q is doubled, the new resultant is perpendicular to P prove that $Q = R$. 2
- b. A point is moving with uniform acceleration describes 25 m in $\frac{1}{2}$ second which elapses after the first second of motion and 198 m in 11th second of the motion find the acceleration of the point and its initial velocity. 3

Group 'C'

[3 × 8 = 24]

20. a. If A be AM, H the HM between **a** and **b** prove that $\frac{a-A}{a-H} \times \frac{b-A}{b-H} = \frac{A}{H}$. 3
 b. If the roots of the equation $ax^2 + bx + c = 0$ be in the ratio 3: 4 prove that $12b^2 = 49ac$. 2
 c. Use property of determinants to prove $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^3 & b^3 & c^3 \end{vmatrix} = (b-c)(c-a)(a-b)(a+b+c)$. 3
21. a. Solve: $\sin x + \cos x = \sqrt{2}$. 2
 b. Show that the angle between two diagonals of cube is $\cos^{-1}\left(\frac{1}{3}\right)$. 3
 c. Show that the following vectors $\vec{a} - 2\vec{b} + 37\vec{c}$, $-2\vec{a} + 3\vec{b} - 4\vec{c}$ and $-\vec{b} + 2\vec{c}$ are coplanar or not. 3
22. a. Find $\frac{dy}{dx}$ if $x^2 + y^2 = \sin xy$. 2
 b. Find the local maxima and minima of function $f(x) = 2x^3 - 15x^2 + 36x + 5$. 3
 c. Find the area enclosed by axis of x and the curve $y = x^2 - 10x + 24$. 3

First Term Examination - I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Group 'A'

Rewrite the correct option of each question in your answer sheet.

(11×1=11)

1. In the relation $\alpha = \beta t + \lambda$, α and λ are measured in meter (m) t is measured in second(s). The SI unit of β must be:
 - a. m
 - b. ms
 - c. s
 - d. ms^{-1}
2. Which one of the following has the least significant figures?
 - a. 0.00050
 - b. 1.00050
 - c. 0.50000
 - d. 1.50000
3. The dimensions of pressure is same as that of
 - a. energy
 - b. energy per unit volume
 - c. force per unit volume
 - d. force
4. A force $\vec{F} = 4\hat{i} + 7\hat{j} - 3\hat{k}$ Newton produces a displacement $\vec{S} = 3\hat{i} - 2\hat{j} - 5\hat{k}$ meter to a body. Then the work done by the force is
 - a. 11 J
 - b. 14 J
 - c. 13 J
 - d. 12 J
5. Three vectors satisfy the relation $\vec{A} \cdot \vec{B} = 0$ and $\vec{A} \cdot \vec{C} = 0$ then \vec{A} is parallel to
 - a. $\vec{B} \times \vec{C}$
 - b. $\vec{B} \cdot \vec{C}$
 - c. \vec{C}
 - d. \vec{B}
6. A Solid ball of metal has a concentric spherical cavity within it. If the ball is heated, volume of cavity
 - a. increase
 - b. decrease
 - c. remains same
 - d. none of the above.
7. The specific heat capacity of a solid body
 - a. always constant
 - b. varies with temperature
 - c. varies with mass
 - d. varies with heat.
8. At the condition of normal incidence, the angle of incidence is
 - a. 0°
 - b. 90°
 - c. 180°
 - d. 45°
9. To a fish in water, a bird in air appears to be at 60 cm above the water surface. The true distance from the water surface ($\mu_w = 4/3$) is
 - a. 80 cm
 - b. 60 cm
 - c. 45 cm
 - d. ∞
10. Light travels through a glass plate of thickness 't' and refractive index ' μ '. of C be the speed of light in vacuum, the time taken by light to travel this thickness is
 - a. $t \mu c$
 - b. tc/μ
 - c. $t/\mu c$
 - d. $\mu t/c$
11. An electron and proton are placed in a uniform electric field then
 - a. the magnitude of electric force acting on them will be equal
 - b. the electric forces acting on them will be equal
 - c. the acceleration will be equal
 - d. the magnitude of their acceleration will be equal

Answers:

1 d	2 a	3 b	4c	5 a	6. a	7.b	8.a	9.a	10.d	11.a
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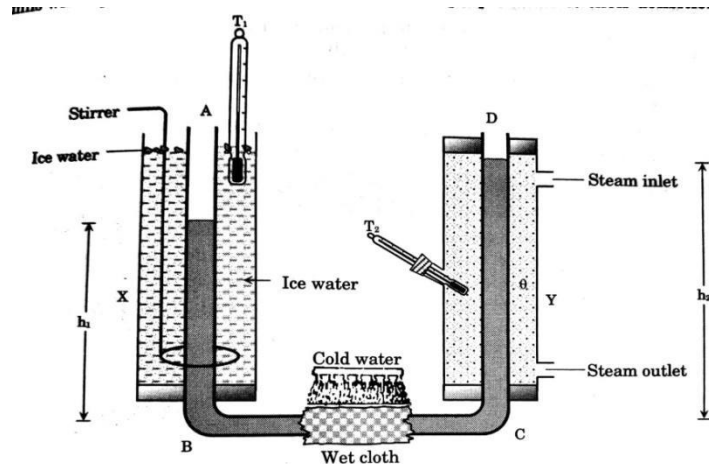
Group 'B'

[8 · 5 = 40]

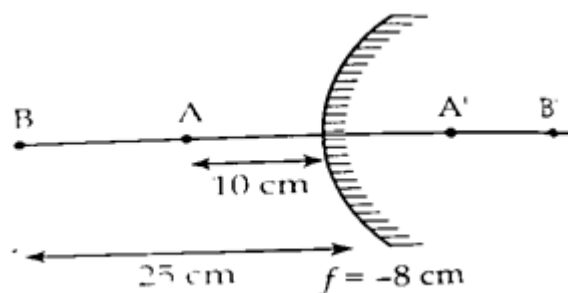
12. a. State triangle law of vector addition. 1
- b. Obtain an expression for the resultant of two vectors P and Q inclined at an angle of Θ by using triangle law of vector addition. 3
- c. The resultant of two forces at right angle is found to be 100 N. If one of them is 60N, find the other. 1

Ans: 80 N

13. a. Water level initially falls in a vessel when it is heated. Why? 1

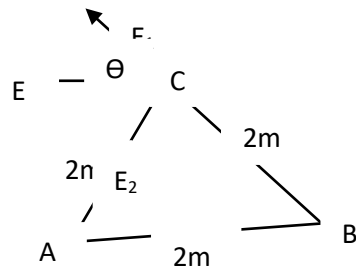


- b. Figure shows an experimental set up for the determination of real expansivity of liquid. Obtain an expression for the determination of the real expansivity of the liquid kept in U shaped tube. 2
- c. In the given diagram above, a column of mercury at 100°C is balanced by the column of mercury at 0°C . The height of mercury in the hotter limb is 76.35 cm and coefficient of absolute expansion of the mercury is $8.33 \times 10^{-4} \text{ }^{\circ}\text{C}^{-1}$. Find the height of mercury in colder limb. Ans: 70.48 cm 2
14. a. Water is cheap and available everywhere but it is not used as thermometric liquid. Why? 2
- b. A faulty thermometer has its fixed points marked at -2 and 98 . What is the correct temperature on the Celsius scale when the thermometer reads 20°C ? Ans: 21.56°C 2
- c. What is the effect of temperature on density of liquid? 1
15. a. What do you mean by principal focus of a concave mirror? 1
- b. Obtain the relation connecting object distance, image distance and focal length of a converging mirror. 3
- c. Concave mirror are used in a headlights of a car, search light etc. Why? 1
16. a. State and explain the laws of refraction of light. 2
- b. Can the absolute value of refractive index of a medium be less than unity? 1
- c. What is the critical angle for light passing from diamond to water? (μ for diamond = 2.42, μ for water = 1.33) (Ans: 33.33) 2
17. a. What does virtual image mean? 1
- b. A particle is moving from the point B to A in front of a convex mirror of focal length 8 cm
- i. Whether its image move from A' to B' or B' to A'. 1



- ii. What distance does the image move when object moves from B to A? 2
- c. Why do we use convex mirror to see the object from vehicles? 1
18. a. What do you mean by quantization of charge? 1
- b. A charged conical conductor loses its charge earlier than a similarly charged sphere. Why? 2
- c. What is the total charge contained by one kilogram electron? 2
- ($e = 1.6 \times 10^{-19} \text{ C}$, $m_e = 9.1 \times 10^{-31} \text{ Kg}$)(Ans: $1.76 \times 10^{11} \text{ C}$)
19. a. Define electric field intensity. Write its units. 1
- b. "Two electric lines of forces never intersect". Comment on this statement. 1

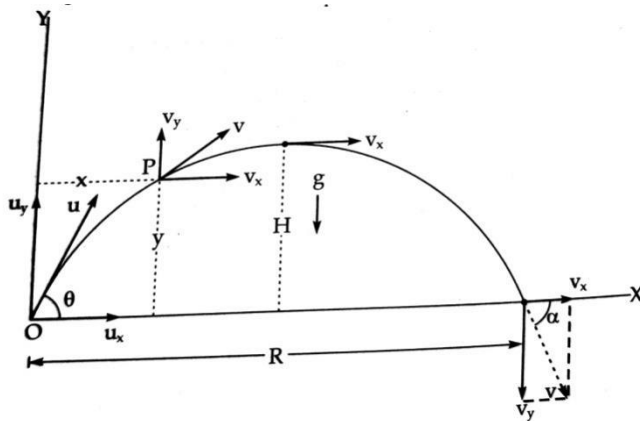
- c. Two charges $-1 \mu\text{C}$ and $2\mu\text{C}$ are placed at the corners A and B of an equilateral triangle ABC of side 2m . Calculate the magnitude and direction of the electric field intensity \vec{E} at the point C. ($\epsilon_0 = 8.85 \times 10^{-12} \text{ F/m}$) (Ans: 5952.8N/C , 19.1°)



Group 'C'

[3×8=24]

20. a. Define projectile motion. 1
 b. Show that the path followed by a projectile fired at an angle θ with the horizontal (as in figure) is a parabola and derive general expression for time of flight and horizontal range. 4



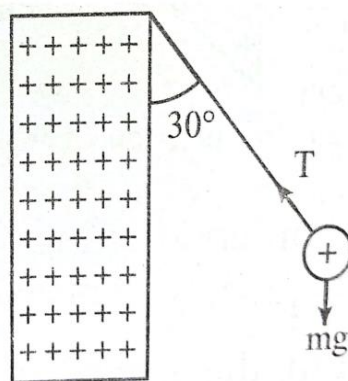
- c. In projectile motion horizontal component of velocity always remains constant but the vertical component of velocity is changing through out of the motion. Why? 1
 d. A projectile is launched with an initial velocity of 30m/s at angle of 60° above the horizontal. Calculate the horizontal and vertical distance covered by the projectile 2 sec. after launch 2

Ans: $30\text{m}, 32.36\text{m}$

21. a. State Newton's law of cooling. 1
 b. Describe a method to determine specific heat capacity of a liquid by method of cooling. 3
 c. Why do animal curl into a ball during winter? 1
 d. A copper calorimeter of mass 300gm contains 500gm of water at 15°C . A 560 gm of aluminum ball at temperature of 100°C is dropped in the calorimeter and the temperature increased to 25°C . Find the specific heat capacity of aluminum. 3
 ($S_c = 400 \text{ Jkg}^{-1} \text{ K}^{-1}$ and $S_w = 4200 \text{ Jkg}^{-1} \text{ K}^{-1}$)

Ans: $528.57 \text{ Jkg}^{-1} \text{ K}^{-1}$

22. a. What is meant by electric flux? 1
 b. State and explain Gauss law in electrostatics and use it to determine electric field at a point outside and inside the charged hollow sphere. 3
 c. A small sphere whose mass is $1.0 \times 10^{-3} \text{ gm}$, carries a charge q of 20 n C . It hangs with a silk thread at large charged conducting sheet as shown in figure. Calculate surface charge density of the sheet. In figure T is the tension (force) developed in the thread due to the weight of the sphere. You may use method of components of vectors. (Ans: $5.01 \times 10^{-9} \text{ C/meter}^2$) 3



d. Draw the electric field lines for isolated positive and negative charges.

1

First Term Examination - II

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Group 'A'

Rewrite the correct option of each question in your answer sheet.

(11×1=11)

1. The length of glass rod is measured by using a screw gauge of least count 0.001cm, the correct measurement is:
 a. 5.32 cm b. 5.320 cm c. 5.3 cm d. 5 cm
2. Which of the following statement is not correct?
 a. A dimensionally correct equation may be correct equation.
 b. A dimensionally correct equation may be incorrect equation.
 c. A dimensionally incorrect equation must be incorrect equation.
 d. A dimensionally incorrect equation may be correct equation.
3. If g is acceleration due to gravity and G is universal gravitational constant, then the dimensions of G/g are:
 a. $[M^0L^0T^0]$ b. $[ML^{-2}]$ c. $[M^{-1}L^2]$ d. $[M^{-3}L^{-2}]$
4. Two vectors $\vec{A} = 5\hat{i} + 7\hat{j} - 3\hat{k}$ and $\vec{B} = 2\hat{i} + 2\hat{j} - a\hat{k}$ are perpendicular to each other then value of a is:
 a. 12 b. -12 c. 8 d. -8
5. Which of the following pair of force can be added to give resultant of 5N?
 a. 2N and 8N b. 3N and 10N c. 2N and 6N d. 10N and 20N
6. How much temperature of a brass rod ($\alpha = 2 \times 10^{-5}/^\circ\text{C}$) should be increased so as to increase its length by 1%:
 a. 100°C b. 200°C c. 250°C d. 500°C
7. What happens when water at 4°C is heated further?
 a. mass increases slightly b. density increases slightly
 c. volume decreases slightly d. volume increases slightly
8. If a converging beam of light falls on a plane mirror. The image formed by the mirror is:
 a. real b. virtual c. highly magnified d. both c and d
9. The index of refraction of diamond is 2.4, velocity of light in diamond is:
 a. $1.25 \times 10^8 \text{m/s}$ b. $2.5 \times 10^8 \text{m/s}$ c. $1.5 \times 10^8 \text{m/s}$ d. $2.0 \times 10^8 \text{m/s}$
10. Total internal reflection would take place if light passes:
 a. from air to water b. from water to glass c. from glass to diamond d. glass to water
11. The minimum value of charge on any charged body may be:
 a. $1.6 \times 10^{-20} \text{C}$ b. $1.6 \mu\text{C}$ c. 1C d. $1.6 \times 10^{-19} \text{C}$

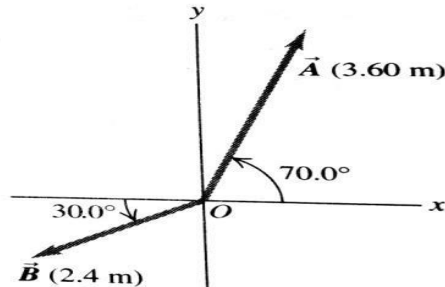
Answers:

1b	2d	3c	4d	5c	6. d	7.d	8.a	9.a	10.d	11.d
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Group 'B'

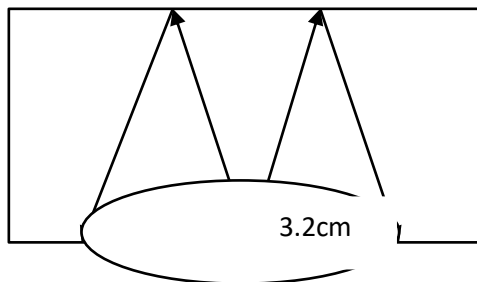
[8 · 5 = 40]

12. a. What is meant by resolution of a vector? 1
 b. Obtain the rectangular components of a vector \vec{F} acting at an angle of Θ above a positive X-axis with the help of a vector diagram. 2
 c. Two vectors \vec{A} and \vec{B} are directed as shown in figure.. Find the X- and Y- components of these vectors. 2

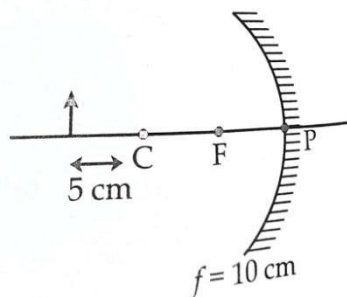


Ans: $A_x=1.23m, A_y=3.38m, B_x=-2.07m, B_y=-1.2m$

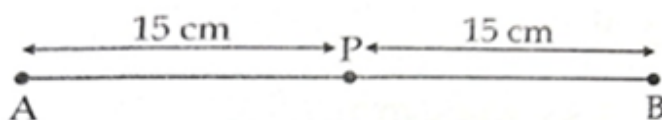
13. a. Define linear expansivity and superficial expansivity and hence obtain the relation between them. 3
 b. A steel tape measure is accurate at $20^{\circ}C$. It is used at $10^{\circ}C$ to measure a kilometer distance. What reading will the tape show? (linear expansivity of steel is $12 \times 10^{-6}/^{\circ}C$) 2
 Ans: 1000.12 m
 14. a. How does the zeroth law of thermodynamics lead to the definition of temperature? 2
 b. At what point of thermometer scale, does Kelvin scale reading coincide with Fahrenheit scale reading? 2
 Ans: 574.25 K
 c. Why do solid expand when their temperature is raised? 1
 15. a. Point out the difference between real image and virtual image. 2
 b. Discuss the sign convention in curved mirror formula. 1
 c. An object 4cm high is placed 12 cm from a convex mirror of radius of curvature 40 cm. Find the nature, position and size of the image. (Ans: **virtual, erect, diminished, 7.5 cm behind the mirror and 2.5 cm high**) 2
 16. a. Define lateral shift. Derive an expression for it. 3
 b. Light from a luminous point on the lower face of a rectangular glass slab 2cm thick, strikes the upper face and the totally reflected rays outline a circle of 3.2cm radius of the lower face. What is the refractive index of the glass? 2



17. a. What can be the magnification of concave mirror when object is placed at F and C? 1
 b. Complete the ray diagram for the given figure and find the nature of image, image distance and size of image produced in the given condition. 2



- c. If whole apparatus is immersed into water, what would be the image distance and image size? 2
18. a. Define electric field intensity at a point and write its unit. 1
- b. Mention the few properties of electric lines of forces. 2
- c. Two points charges of magnitude $1.0 \times 10^{-8} \text{ C}$ and $2.0 \times 10^{-8} \text{ C}$ are 30 cm apart in air. Find the electric field at a point mid way between them. ($\epsilon_0 = 8.85 \times 10^{-12} \text{ F/m}$). (Ans: 4000 N/C) 2

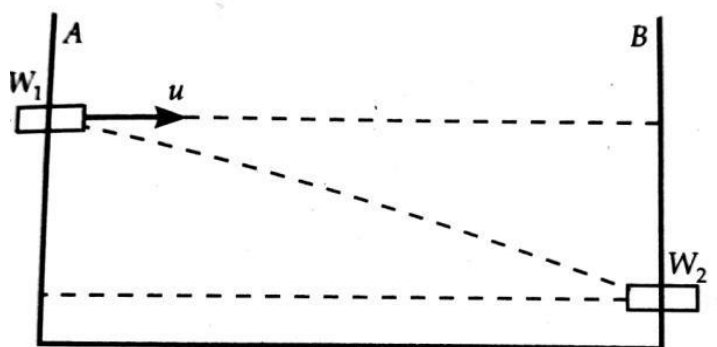


19. a. If a body is charged positively, does its mass increase, decrease or remain same? 1
- b. Can a charge be added to another resulting zero charge? 1
- c. How many electrons must be added to charge a body with magnitude $6.4 \times 10^{-19} \text{ C}$? (Ans:4) 2
- d. Draw electric lines of force for isolated positive charge and isolated negative charge. 1

Group 'C'

[3×8 = 24]

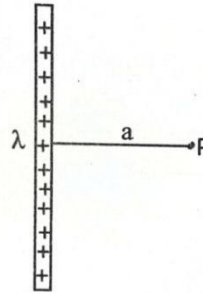
20. a. Two stones P and Q of different mass 'm' and '2m' respectively are dropped simultaneously from the top of a tower and reach the ground with different energies. Which one is faster? 2
- b. Define projectile motion. Prove that the trajectory of a projectile is parabolic in nature? 3
- c. Two tall buildings A and B face each other and are at a distance of 180m from each other. With what velocity must a ball be thrown horizontally from the window 55 m above the ground in the building A, so that it enters a window 10.9 m above the ground in the building B? (Ans:60m/s) 3



- d. At what point in the trajectory, does a projectile have its
- minimum speed
 - maximum speed. 1
21. a. What do you mean by heat capacity and specific heat capacity? Write their units. 2
- b. Describe the method of mixture to measure the specific heat capacity of solid. 3
- c. A copper pot with mass 500g contains 170gm of water at a temperature of 20°C . A 250 gm block of iron at 85°C is dropped into the pot. Find the final temperature assuming no heat loss to the surroundings. ($S_{\text{Cu}} = 390 \text{ J/kgK}$, $S_{\text{w}} = 4200 \text{ J/kgK}$, $S_{\text{Fe}} = 470 \text{ J/kgK}$) 3

Ans: 27.44°C

22. a. What is meant by electric flux? 1
 b. What are Gaussian surfaces in electrostatic? Should the shape of Gaussian surface be specific? 2
 c. The figure shows a long straight conductor uniformly charged with positive charges. If the linear charge density, what is the electric field intensity at a point P which is 'a' distance away from the conductor. Obtain the result by drawing a Gaussian surface. 3



- d. A very long straight wire has charge per unit length $1.5 \times 10^{-11} \text{ C/m}$. At what distance from the wire, is the electric field magnitude equal to 2.50 N/C ? (Ans: $1.08 \times 10^{-11} \text{ m}$) 2

Second Term Examination - I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

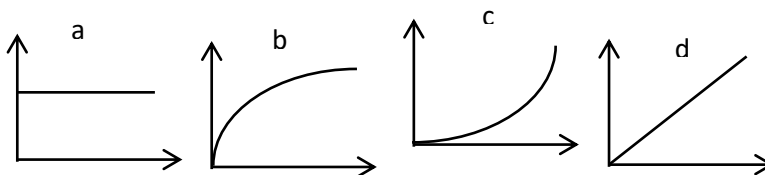
Set: C

Group 'A'

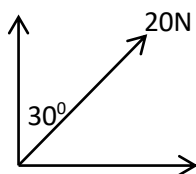
Rewrite the correct option of each question in your answer sheet.

[11×1=11]

1. Which quantity with its unit is correct?
 a) acceleration of a car = 5 m/s. b) electric current in a lamp = 3.0 V/s.
 c) electric potential difference across a battery = 1.5 J/C. d) torque produced in a top = 5 N/m.
2. A stone is thrown horizontally from the top of a cliff. Air resistance is negligible. Which graph shows the variation of the vertical component of the velocity of stone with time?



3. A bullet of mass 10 g travelling horizontally with a velocity of 300 m/s strikes a block of wood mass 290 g, at rest. The bullet is embedded in a block after the impact. Calculate the common velocity of bullet and wood block
 a) 300 m/s b) 10 m/s c) 100 m/s d) 310 m/s
4. A lift is moving up with an acceleration equal to $1/5$ of that due to gravity. The apparent weight of a 60 kg man standing in lift is



- a) 48 kg b) 72 kg c) 60 kg d) none of the above
5. A body is moving with a constant speed in a straight line path. No force is required to
 (a) increase its speed (b) decrease the momentum

- (c) change the direction **(d)** keep it moving with uniform velocity.
- Heat required to melt 1 g of ice is 80 cal. A man melts 60 g of ice by chewing in one minute .His power is
a) 4800 W b) 336 W c) 1.33 W d) 0.75 W
 - What is the value of -40°F in Celsius scale?
a) -40°C b) -64°C c) 20°C d) 40°C
 - If coefficient of cubical expansion is ‘n’ times the coefficient superficial expansion , the value of ‘n, is
a) 3 b) 4 c) $3/2$ d) $4/3$
 - The electric lines of force about a negative point charge are
a) Circular, anticlockwise b) Circular clockwise c) Radial inward d) Radial outward
 - An electron is brought towards another electron. The electric potential energy of the system
a) decreases b) remains same c) increases d) becomes zero
 - A 1 microfarad capacitor is charged to 40 V. The energy stored in the capacitor is
a) 1800 J b) 1800 erg c) 8000 erg d) 16000 erg

1 c	2d	3b	4b	5d	6.b	7a	8c	9. d	10. c	11c
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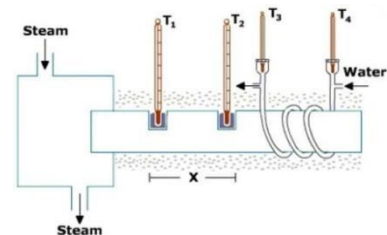
Group 'B'

[8 · 5 = 40]

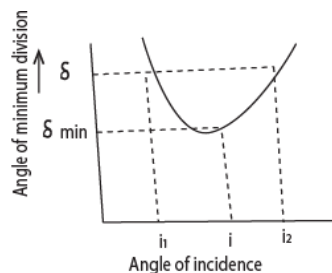
- Can a body have a zero velocity but not zero acceleration? Give an example of projectile motion. [1+1]
 - A bomb is to be dropped from a moving helicopter on the ground. Explain how can it hit the target? 2
 - A hunter aims his gun horizontally and fires a bullet directly towards a monkey sitting at a distant free. At the instant, the bullet leaves the barrel, the monkey drops. Will the bullet hit the monkey? 1
- Give reason: Steam at 100°C burns more severely than water at 100°C . 2
 - What is the result of mixing 10 g of ice at 0°C and 100 g of water at 100°C ? (Latent heat of fusion of ice = 80 cal/g) 3

Ans: 110 gram of water at 83.66°C

- The apparatus shown in adjoining figure is Searle’s apparatus.
At steady state, when the thermometers show constant readings, the rate of heat flow through any cross-section of the rod is equal to rate of heat absorbed by water. Derive the expression for the thermal conductivity of the rod used. 3



- Estimate the rate of heat loss through a glass window of area 2 m^2 and thickness 5 mm when the temperature of the room is 27°C and that of air outside is 5°C .
(Thermal conductivity of glass = $1.2\text{ W m}^{-1}\text{ K}^{-1}$) Ans: 1056 Watt 2
- What does the given curve represent? Explain it. 1



- Find the relation between refractive index, angle of prism and angle of minimum deviation. 3
 - Find the condition for no emergence of light from a prism. 1

16. a. Draw the ray diagram showing the formation of real image by a concave lens. 1
 b. A convex lens is immersed in water will its focal length change? Explain. 2
 c. An object is placed at distance 1.5 m. from a screen and a convex lens is interposed between them. The magnification produced is 4. What is the focal length of the lens? (Ans: 0.24m)
17. a. State Gauss law. 1
 b. What will be the strength of the electric field if the Gaussian surface does not include any net charge? 1
 c. Two point charges $+20\mu\text{C}$ and $+80\mu\text{C}$ are separated by 24cm. Find position of the point where electric field is zero. (Ans: 8 cm from $20\mu\text{C}$) 3
18. a. Define electric potential and potential gradient. 2
 b. Show that electric field intensity is negative of potential gradient. 2
 c. Electric field intensity in a region is zero. Can we conclude that electric potential must be zero in the region? 1
19. a. Why pointed ends are not kept in electrostatic machine? 1
 b. Two small spheres each having a mass of 0.1 gm are suspended from a point by threads 20 cm long. They are equally charged and they repel each other to a distance of 24 cm. what is the charge on each sphere? (Ans: $0.69 \times 10^{-6} \text{ C}$) 2
 c. Define electric field strength acting on a stationary point charge. If an electron is released from the rest in an electric field, it starts to move from the point of lower potential to higher potential. Explain why? 2

Group 'C'

[3×8 = 24]

20. a. State Newton's laws of motion. 2
 b. Explain how Newton's second law of motion consists Newton's first law of motion. 1
 c. State and prove principle of conservation of linear momentum. 3
 d. A lift moves (i) up and (ii) down with an acceleration of 2ms^{-2} . In each case, calculate the reaction of the floor on a man of mass 50 kg standing in the lift.. Ans 600N,400N 2
21. a. Describe Newton's law of cooling with some suitable daily life examples. 2
 b. On what principle Newton's law of cooling depends? 1
 c. The temperature of a body falls from 90°C to 70°C in 5 minutes when placed in surrounding of constant temperature 20°C . Find the time taken for the body to become 50°C . Ans: 7.5 minute 3
 d. Draw a graph for the variation of temperature with time during cooling. 2
22. a. Fill the table. 4

Mirror	Position of object	position of image	Nature of image	Size of image
concave	i. at 2F	?	?	?
	ii. at infinity	?	?	?
	iii. ?	?	iii. virtual and erect	?
	?	iv. beyond 2F	?	?
?	?	?	Virtual and erect	Small
?	?	?	Virtual and erect	large

- b. i. Define critical angle and total internal reflection. [1+1]
 ii. Calculate the critical angle for water glass interface. [$\mu_g = 1.5$, $\mu_w = 1.33$] (Ans: 62.4) 2

Second Term Examination - II

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: D

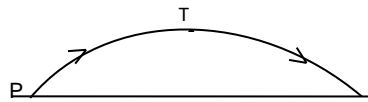
Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

1. A force of $(3i+4j)$ Newton acts on a body and displaces it by $(3i + 4j)$ meters. The work done by the force is:
 a. 10J b. 12J c. 16J d. 25J

2. In the absence of air resistance, a stone is thrown from P and follows a parabolic path in which the highest point reached is T.



- The vertical component of acceleration of the stone is
- Zero at T
 - Great at T
 - Greatest at P
 - The same at P as at T
- A light body A and a heavy body B have equal linear momentum. The KE of body A
 - is equal to that of B
 - is greater than that of B
 - is less than that of B
 - is zero
 - Swimming is possible by the
 - first law of motion
 - second law of motion
 - third law of motion
 - Newton's law of gravitation
 - A motorbike moving at a speed of 30m/s overtakes a car moving at 25m/s. Looking at the car from the rear plane mirror placed in the bike, what is the receding velocity of the image of the car?
 - zero
 - 5 m/s
 - 10 m/s
 - 12m/s
 - Which of the following has the highest specific heat capacity?
 - copper
 - hydrogen
 - water
 - silver
 - If the coefficient of cubical expansion is 'n' times the coefficient of superficial expansion the value of n is
 - 3
 - 4
 - 3/2
 - 4/3
 - If the temperature of the sun is doubled, the rate of energy received on the earth will be increased by a factor
 - 2
 - 4
 - 8
 - 16
 - Electric current is a
 - scalar quantity
 - vector quantity
 - tensor
 - number only
 - An electron is brought towards another electron. The electric potential energy of the system
 - decreases
 - remains same
 - increases
 - becomes zero
 - If a capacitor of capacitance $10\mu F$ has potential difference of 100 volt across its ends, the energy stored in it is
 - 0.05 J
 - 1 J
 - 0.005 J
 - 0.1 J

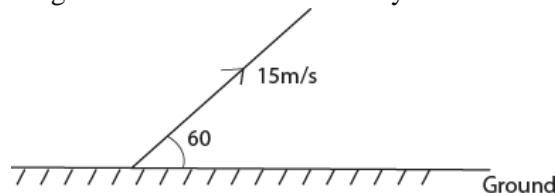
Answers:

1d	2d	3b	4c	5a	6c	7c	8d	9.a	10. c	11a
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Group 'B'

[8 · 5 = 40]

12. A ball is thrown from horizontal ground with an initial velocity of 15 ms^{-1} at an angle 60° to the horizontal.

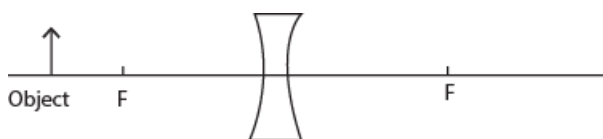


- Calculate, for this ball, the initial values of
 - Vertical component of velocity **Ans :7.5m/s,12.9m/s** 1
 - Horizontal component of velocity 1
- Assuming air resistance can be neglected, use your answers in (a)
 - To determine the maximum height to which the ball rises 1
 - Time of flight 1
 - Horizontal range 1
- The coefficient of linear expansion of aluminium is $2.4 \times 10^{-5}/\text{k}$. What does it mean? 1
 - What are the values of coefficient of superficial expansion and coefficient of cubical expansions of aluminium? 1

- c. A surveyor uses a steel measuring tape that is exactly 50.000 m. long at a temperature of 20°C. The marking on the tape are calibrated for this temperature. (i) What is the length of the tap when the temperature is 35°C. (ii) When it is 35°C, the surveyor uses the tape to measure a distance. The value that she reads off the tape is 35.754m. What is the actual distance? ($\alpha_{\text{steel}} = 1.2 \times 10^{-5} / ^\circ\text{C}$) 3

Ans: i. 50.009m, 35.76m

14. a. What is meant by thermal conductivity of conductor? 1
 b. A slab of stone of area 0.36m^2 and thickness 10 cm is exposed on the lower surface to steam at 100°C. A block of ice at 0°C rests on the surface of the slab. In one hour, 4.8 kg of ice is melted. Calculate the thermal conductivity of stone. (*Latent heat of fusion of ice* = $3.36 \times 10^5 \text{Jkg}^{-1}$). Ans: $0.72 \text{Wm}^{-1}\text{K}^{-1}$. 3
 c. Why thermal conductivity is larger for metal than that of other solid like wooden block? 1
 15. a. Discuss the deviation in small angle prism. 2
 b. A glass prism has angle 60°. If the angle of minimum deviation is 40°, at what angle the ray should be incident for minimum deviation? (Ans: 50) 2
 c. Find the condition for no emergence of light from a prism. 1
 16. a. A small object is placed on the principal axis of, and 150 m. away from a diverging lens of focal length 100 mm.



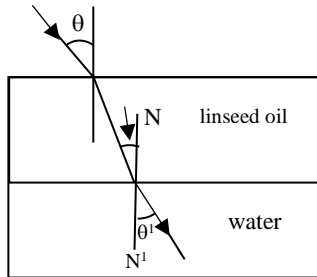
- i. Copy fig and draw rays to show how an image is formed by the lens.
 ii. Calculate the distance of the image from the lens. [1+1 = 2]
 b. The diverging lens in practical is replaced by a converging lens, also of focal length 100 mm, the object remains in the same position and an image is formed by the converging lens. Compare two properties of this image with those of the image formed by the diverging lens in part a. 3
 17. a. State Gauss theorem of electrostatics. 1
 b. Use it to find the electric field intensity at the surface of charged sphere. 3
 c. What would be the electric field inside the sphere? 1
 18. a. What do you mean by electric potential and electric potential energy? 2
 b. What is electron volt? 1
 c. An electron is accelerated through a potential difference of 200V. What is the velocity acquired by the electron? (Ans: $8.39 \times 10^6 \text{m/s}$)
 [Take $e/m = 1.6 \times 10^{11} \text{C/kg}$] 2
 19. a. What do you mean by dielectric strength of a dielectric? 1
 b. Explain the effect of inserting dielectric between the plates of a parallel plate capacitor on its capacitance. 2
 c. The space between the plates of a parallel plate capacitor of capacity $10\mu\text{F}$ having air between plates is filled up with mica ($\epsilon_r = 2$). What will be the new capacity? 2

Group 'C'

[3×8=24]

20. a. State the principle of conservation of linear momentum. 1
 b. Explain and derive this principle using Newton's second and third law of motion. 3
 c. A gun weighing 10 kg fires a bullet of 50 gm. with a velocity of 500ms^{-1} i) With what velocity does the gun recoil. Ans:-2.5m/s
 ii) What is the resultant momentum of the gun and the bullet before and after firing? 2
 d. Can two unequal coplanar forces acting together produce condition of equilibrium? 2
 21. a. Define specific latent heat of fusion. 1
 b. Why is latent heat of vaporization greater than that of latent heat of fusion? 1
 c. How much steam must be passed into a mixture of ice and water in order to melt 10 gm. of ice? ($L_v = 540 \text{cal/gm}$; $L_f = 80 \text{cal/gm}$) Ans: 1.48 gram 2
 d. State Boyle's law. Draw a graph to show variation of pressure and volume. 2
 e. Why do the gases at low temperature and high pressure show large deviation from ideal behavior? 2

22. a. Define total internal reflection. 1
 b. Can total internal reflection be achieved if the object originates in rarer medium? Explain with a diagram to justify your answer. 2
 c. The light beam shown in figure makes an angle of 20.0° with the normal line NN' in the linseed oil. Determine the angles θ and θ' . [The refractive index of linseed oil is 1.48 and the refractive index of water is 1.33]. 3



Ans: $\theta = 30.4^\circ$ and $\theta' = 22.3^\circ$

- d. Can virtual image be produced with the help of concave mirror? When? Explain with ray diagram. 2

Send - Up Examination - 2079

Class: XI

Time: 3 hrs

F.M.: 75

P.M.: 30

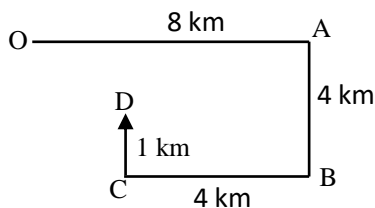
Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks. (All answers of numerical problems should be expressed in S.I. Unit).

Group 'A'

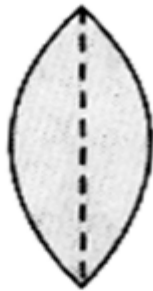
Rewrite the correct option of each question in your answer sheet.

[11·1=11]

- What is the result in significant figures? When 327.6 is added with 15.22:
 a. 342.82 b. 342.8 c. 342.820 d. 342
- A car moves from O to D along the path OABCD. What is the displacement of the car from the starting point?



- 3 km b. 5 km c. 7 km d. 17 km
- At the top of the trajectory of a projectile, the direction of velocity and accelerations are:
 a. parallel to each other b. perpendicular to each other
 c. inclined at 45° to the horizontal d. inclined at 45° to each other
 - Kinetic energy of a body of mass m is E . Its linear momentum will be equal to:
 a. $2mE$ b. $\sqrt{2mE}$ c. $\sqrt{\frac{mE}{2}}$ d. $\frac{2E}{m}$
 - If the length of a wire is reduced to half, its load bearing capacity will:
 a. decrease to half b. decrease to one fourth c. increase by two d. remain same
 - An object is moved from infinity to focus of a concave mirror the size of image goes on:
 a. Increasing b. decreasing c. both increasing and decreasing d. attaining same size
 - The color of light is due to:
 a. velocity b. frequency c. wavelength d. all
 - A convex lens has focal length f . It is cut into two parts along the dotted line as shown in figure the focal length of each part will be:



- a. $\frac{f}{2}$ b. f c. $\frac{3f}{2}$ d. 2f

9. If the sky is seen from the moon's surface it will appear:
 a. white b. red c. blue d. black
10. A uniform wire of resistance R is divided into 10 equal parts and all of them are connected in parallel. The equivalent resistance will be:
 a. 0.01 R b. 0.1 R c. 10 R d. 100R
11. Resistance of a semiconductor:
 a. decrease with increase in temperature b. increase with increase in temperature
 c. does not change with temperature d. none of these

Answers:

1b	2b	3b	4a	5d	6.a	7.c	8.d	9.d	10.a	11a
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Group 'B'

Write short answer to the following questions

[8 · 5 = 40]

12. a. Explain work done by a constant force and variable force. 2
 b. What is work done in holding a 15 kg suitcase while waiting for a bus for 15 minutes? 1
 c. A body of mass 1.0 kg initially at rest is moved by a horizontal force of 0.5 N on a smooth frictionless table. Calculate the work done by the force in 10 sec and show that this is equal to the change in kinetic energy of the body. **Ans: 12.5J** 2

OR

- a. Write down the equation that defines linear momentum. Is the momentum a vector or a scalar quantity? 1
 b. A trolley of mass 2.0 kg is moving with a velocity 0.6 m. It collides with a second, stationary trolley of mass 4.0kg. They stick together and move off at 0.2 ms⁻¹.
 i) Show that momentum is conserved in this collision. **Ans: p= 1.2kgm/s** 2
 ii) Explain whether the collision is elastic or inelastic. 2
13. a. What causes thermal expansion? 1
 b. Define coefficient of superficial expansion. Does it depend upon initial area? Explain. 2
 c. A steel girder is 50m. long and has a cross sectional area 250 cm². What is the force exerted by the girder when heated from 5°C to 25°C? [$\alpha_s = 11 \times 10^{-6}/^\circ\text{C}$ and $Y_s = 2 \times 10^{11} \text{Pa}$] 2
Ans: $11 \times 10^5 \text{ N}$
14. a. Define specific heat capacity. 1
 b. Water is used as heating and cooling agent. Why? 2
 c. A solid of 200 gm is heated to a temperature of 80°C and is found to melt just 40 gm. of ice. Specific latent heat of ice = $3.36 \times 10^5 \text{ Jkg}^{-1}\text{K}^{-1}$. Calculate the specific heat capacity of solid. 2
Ans: $420 \text{ Jkg}^{-1}\text{K}^{-1}$
15. a. What do you mean by ideal gas? 1.5
 b. Define absolute zero temperature with support of P - T and V - T graph. 1.5

- c. A glass vessel contains air at 27°C. To what temperature must it be heated to expel one fourth of the air, the pressure remaining constant. (Ans: 400K, 127°C) 2
16. a. Explain why a ray of light in air deviates while entering into medium. 1
- b. Discuss the expression for the refractive index of a glass prism if the ray suffers a condition of minimum deviation. 2
- c. Find the angle of minimum deviation in case of light passing symmetrically within the prism of angle 60° and refractive index 1.6. (Ans: 46.26°) 2

OR

- a. Draw the ray diagram showing the formation of real image by a concave lens. 1
- b. A convex lens is immersed in water will its focal length change? Explain. 2
- c. An object is placed at distance 1.5 m. from a screen and a convex lens is interposed between them. The magnification produced is 4. What is the focal length of the lens? (Ans: 0.24m) 2
17. a. Define electric field intensity. 2
- b. An electron of charge $1.6 \times 10^{-19} \text{C}$ is situated in a uniform electric field of intensity $1,20,000 \text{Vm}^{-1}$. Find
- The force on it. 1
 - Its acceleration and 1
 - The time it takes to travel 20 mm from rest. (electron mass, $m = 9.1 \times 10^{-31} \text{kg}$). 1
18. a. What do you mean by dielectric strength of a dielectric? 1
- b. Explain the effect of inserting dielectric between the plates of a parallel plate capacitor on its capacitance. 2
- c. The space between the plates of a parallel plate capacitor of capacity 10 F having air between plates is filled up with mica ($\epsilon_r = 2$). What will be the new capacity? 2
19. a. Distinguish between e.m.f. and potential difference. 2
- b. Explain using $R = \rho \frac{l}{A}$, how changes in dimensions of a conducting wire works as a variable resistor? 2
- c. Two conductors have a combined resistance of 18 Ω when in series and 4 Ω when in parallel. Find the resistance of each conductor. (Ans: 12 Ω , 6 Ω) 1

Group 'C'

Give long answer to the following questions

(3×8=24)

20. a. State the principle of conservation of linear momentum. 1
- b. Explain and derive this principle using Newton's second and third law of motion. 3
- c. A gun weighing 10 kg fires a bullet of 50 gm. with a velocity of 500ms^{-1} i) With what velocity does the gun recoil. ii) What is the resultant momentum of the gun and the bullet before and after firing? 2
- d. Can two unequal coplanar forces acting together produce condition of equilibrium? Ans:-2.5m/s, zero in each case 2
21. a) A body of mass 'm' travels at constant speed in a circular path of radius r. It takes time T to complete one revolution.
- Write down expressions in terms of m r and T for the speed, acceleration, the angular velocity the KE, the momentum of the body. 2
 - Which of these quantities change during a revolution and which remain constant? 1
 - On a sketch show that direction of acceleration and the momentum at a particular instant. 1
- b) What is the acceleration of moon? The moon may be considered to travel about the earth in a circular orbit of radius $3.82 \times 10^8 \text{m}$ and period $2.36 \times 10^6 \text{s}$. Why does the moon not fall and hit the earth? 1
- c) By considering the acceleration of free fall at the earth surface, show that the magnitude of the moon's acceleration is consistent with Newton's inverse square law of gravitation. (Radius of earth = $6.36 \times 10^6 \text{m}$) 1

OR

- a) The maximum vertical distance through which a fully dressed astronaut can jump on earth is 0.5 m. estimate the maximum vertical distance through which he can jump on moon which has a mean density two-third that of earth and radius one-fourth that of earth. Ans: 3m 3
- b) Determine the ratio of time duration of his jump on moon to that his jump on the earth assuming that the initial velocity on both places are equal. Ans: 6:1 2

- c) An earth satellite moves in a circular orbit with a speed of 6.2 kms^{-1} . Find the time of one revolution and its centripetal acceleration. Ans: 6.05 m/s^2 and $t = 107.5 \text{ min}$ 3
22. a. State Einstein's mass energy relation. 1
- b. Define atomic mass unit. Write its energy equivalence. 2
- c. Calculate the energy released during the following reactions: 2
 ${}^7\text{N}^{14} + {}^2\text{He}^4 \rightarrow {}^8\text{O}^{17} + {}^1\text{H}^1$
 Given the rest masses of various particles in u are
 ${}^7\text{N}^{14} = 14.03837\text{u}$, ${}^2\text{He}^4 = 4.0026\text{u}$,
 ${}^8\text{O}^{17} = 16.99134\text{u}$, ${}^1\text{H}^1 = 1.00842\text{u}$
 Ans: 1.23 mev
- d. All nuclei have nearly the same density. Why? 2
- e. Is it possible to have a negative mass defect on a nucleus? 2

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Class: XI

Time: 3 hrs

F.M.: 75

P.M.: 30

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks. (All answers of numerical problems should be expressed in S.I. Unit).

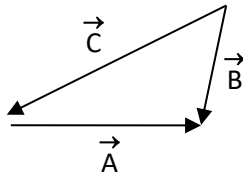
Attempt all questions.

Group 'A'

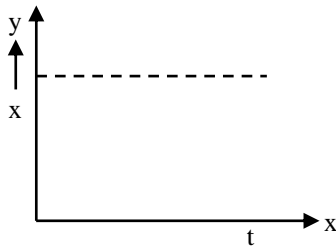
Rewrite the correct option in your answer sheet.

[11×1=11]

1. For the given figure the correct one is

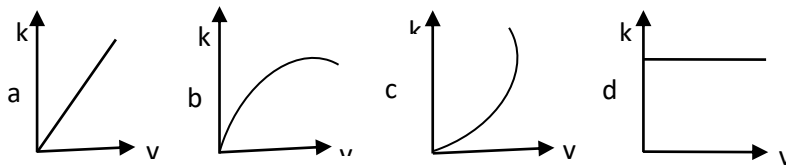


- a. $\vec{A} + \vec{B} = \vec{C}$ b. $\vec{B} + \vec{C} = \vec{A}$ c. $\vec{C} + \vec{A} = \vec{B}$ d. $\vec{A} + \vec{B} + \vec{C} = 0$
2. Which of the following is the correct statement from the given displacement time graph?

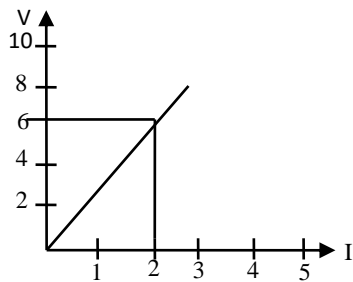


- a. It represents retarded motion. b. It represents accelerated motion..
- c. It represents motion with constant velocity. d. It represents particle at rest.
3. The number of significant figures in 7316000 is
- a. 7 b. 6 c. 5 d. 4
4. A light body 'A' and a heavy body 'B' have equal linear momentum. The K.E. of body 'A'
- a. is equal to that of B. b. is greater than that of B.
- c. is less than that of B. d. is zero.

5. The graph of K.E. (K) of a body versus velocity (v) is represented as.



6. An object is moved from infinity to focus of concave mirror, the size of image goes on
 a. increasing b. decreasing
 c. both increasing and decreasing d. attaining same size
7. The color of light is due to
 a. velocity b. frequency c. wavelength d. all of these
8. Angle of deviation of a prism depends on
 a. angle of prism b. material of prism c. angle of incidence d. all of these
9. Rainbow is formed due to
 a. diffraction b. dispersion c. reflection d. refraction
10. The resistance R from the following graph is



- a. $1\ \Omega$ b. $2\ \Omega$ c. $3\ \Omega$ d. $4\ \Omega$
11. Quark combination of neutron is
 a. uss b. uud c. udd d. dds

Answers:

1.b	2d	3d	4b	5 b	6.a	7.c	8.d	9.b	10.c	11. c
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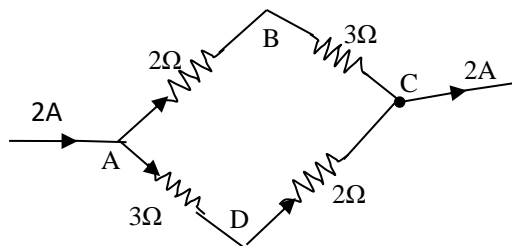
Group 'B'

Give short answer to the following questions.

[8×5=40]

12. a. What do you mean by projectile? 1
 b. Show that the path followed by projectile is parabolic. 2
 c. A projectile is fired with a velocity of 320 ms^{-1} at an angle of 30° to the horizontal. Find (a) the time to reach the greatest height (b) Horizontal range. **Ans: 16.4s, 9039.9m** 2
- OR**
- a. State and prove principle of conservation of linear momentum. 3
 b. A bullet of mass 20g is fired horizontally into a suspended stationary wooden block of mass 380 g. with a velocity of 200 m/s. what is the common velocity of bullet and block if the bullet is embedded in the block?**Ans 10m/s** 2
13. a. State Newton's law of cooling. 1
 b. The water in the bucket cools from 55°C to 50°C in 5 minutes and from 50°C to 45°C in 7 minutes. Estimate the room temperature. 3
 Ans: 35°C
 c. Does Newton's law of cooling apply for warming as well as cooling? 1

14. a. Derive ideal gas equation. 3
 b. Differentiate between universal gas constant and ordinary gas constant. 1
 c. What is significance of universal gas constant? 1
15. a. State and explain Stefan-Boltzmann law. 3
 b. Why do the bodies not lose all their thermal energy by radiation and cool down to 0 Kelvin? 1
 c. The emissivity of copper is 0.3. What does it mean? 1
16. a. What do you mean by total internal reflection? 1
 b. Why does diamond sparkle? 1
 c. Will the sparkling of diamond change, if it is dipped in transparent oil? 1
 d. Can light travelling from air to glass suffer total internal reflection? Justify your answer. 2
- OR
- a. Can a convex mirror form a real image? Justify your answer. 1
 b. Spherical mirror may behave as a plane mirror as a special case. Explain. 2
 c. What is the difference between virtual image formed by plane, concave and convex mirror. 2
17. a. Define electric field intensity and mention its unit. 2
 b. Two charges each of $+2\mu\text{C}$ are located at two corners of an equilateral triangle of side 10 cm. What is electric field intensity at third corner? 3
18. a. What is meant by capacitance of capacitor? Mention its unit. 1+1
 b. Write down any two applications of capacitors. 1
 c. Is there any kind of material that when inserted between the plates of a capacitor reduces its capacitance? 2
19. a. There is an impression among many people that a person touching a high power line gets shock. Is it true? Explain. 2
 b. A large number of free electrons are present in metals. Why is there no current in the absence of electric field? 1
 c. Find the p.d. between B and D. (Ans: 1V) 2



Group 'C'

Give long answer to the following questions:

[3×8=24]

20. a. Derive an expression for the variations of 'g' with altitude. 3
 b. Where the value of 'g' is maximum (i) on surface of earth (ii) inside earth (iii) above the earth surface. 1
 c. What will happen to the value of 'g' if the earth stops rotating? 2
 d. If the radius of the earth becomes two times its present value and its mass remains unchanged then how will the weight of an object on the surface of the earth be affected? 2
21. a. Prove $F = \frac{mv^2}{r}$, where symbols have usual meaning. 3
 b. Explain why a cyclist inclines himself to the vertical while moving round a circular path. 2
 c. At what angle should a circular road be banked so that a car running at 50 km/hr is safe to go round the circular turn of 200 m radius? 3

OR

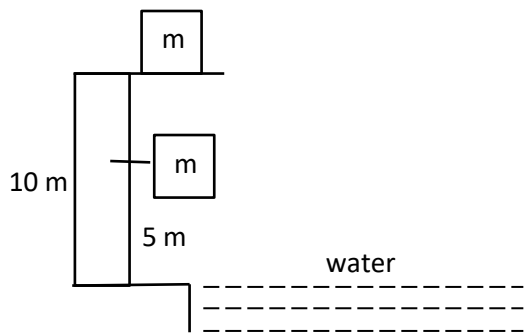
- a. State and prove principle of conservation of mechanical energy. 3
 b. A body of mass m drops from a boat 10 m above the water surface as shown in fig. (i) use conservation of mechanical energy to find speed 5m above the water surface.

Ans:10 m/s

(ii) Find the speed as object hits the water surface.

Ans:14 m/s

3



c. Energy is neither created nor destroyed but what happens when much energy is spent against friction? 2

22. a. Calculate mass defect, B.E. and B.E. per nucleon of $^{56}_{26}\text{Fe}$. 3
 given mass = 55.934939u.
 mass of neutron = 1.008665u
 mass of proton = 1.007825u.
 1u = 931 mev.

Ans: (i) 0.528461 u, (ii) 491.99721 mev, (iii) 8.79 mev

b. Describe N - type extrinsic semiconductor with diagram. 2

c. Explain about red shift and expanding universe. 2

d. Write an expression for Schwarzschild radius. 1

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Class: XI

Time: 3 hrs

F.M.: 75

P.M.: 30

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks. (All answers of numerical problems should be expressed in S.I. Unit).

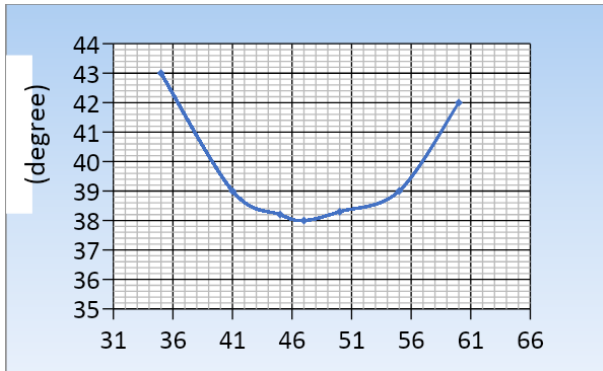
Attempt all questions.

Group 'A'

Rewrite the correct option in your answer sheet.

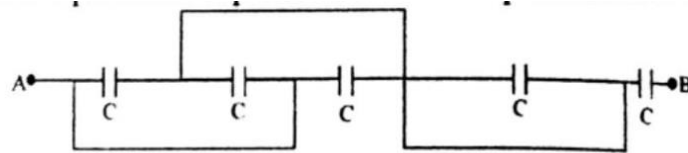
[11×1=11]

- Two bodies of masses 4 kg and 5 kg are moving with equal momentum, the ratio of their respective kinetic energies is
 a. 4: 5 b. 2: 1 c. 1: 3 d. 5: 4
- If the scalar product of two vectors A and B is zero, then their vector product is
 a. AB b. A + B c. A - B d. 0
- The SI unit of poisons ratio is
 a. Jm^{-1} b. Nm^{-2} c. Nm^2 d. unit less
- If a particle moves with constant angular velocity in a circle then during the motion its
 a. momentum is conserved. b. energy is conserved
 c. both energy and momentum are conserved. d. none of the above
- A block of mass m is placed on a smooth wedge of inclination θ . The whole system is accelerated horizontally so that the block does not slip on the wedge. The force exerted by the wedge on the block (g is the acceleration due to gravity) will be
 a. $mg \cos\theta$ b. $mg \sin\theta$ c. mg d. $mg/\cos\theta$
- A ray of light passes through an equilateral prism ($\mu = 1.5$). The angle of deviation is,
 a. 45° b. 60° c. 20° d. 37.18°
- When light passes through the glass slab,
 a. wavelength decreases b. wavelength increases

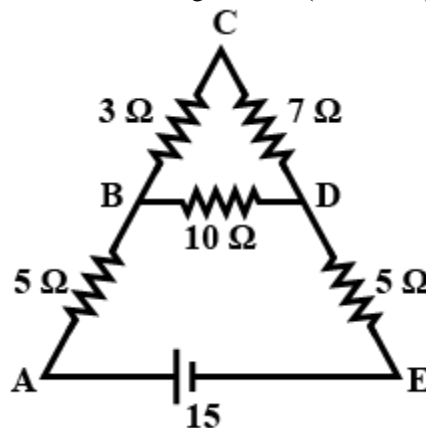


The figure shows an i-D curve for some glass prism

- a. What does the graph indicate? 1
 - b. List out any two angles of incidence for which the angle of deviation is equal. (Ans: 41 & 55) 1
 - c. Find the angle of the prism. (Ans: 56°) 1
 - d. Find the refractive index of the material of the prism. (Ans: 1.56) 2
17. a. Two electric lines of force never intersect each other. Why? 1
 - b. A proton is placed in a uniform electric field directed along the positive X-axis. In which direction will it tend to move? 1
 - c. A charged oil drop remains stationary when situated between two parallel horizontal metal plates 25mm apart and a p.d. of 1000V is applied to the plates. Find the charge on the drop, if it has a mass of 5×10^{-15} kg. (Take $g = 10 \text{ m/s}^2$) (Ans: $8 \times 10^{-19} \text{ C}$) 3
18. a. Explain the effect on the capacitance of a parallel plate capacitor of changing the surface area and separation of the plates. 1
 - b. Explain the effect of changing a dielectric in a parallel plate capacitor. 1
 - c. From the given figure, calculate the equivalent capacitance between A and B. 3



19. a. Write the formula for series and parallel combination of resistances. 1
- b. An electric bulb is marked with 100 W. How do you understand its meaning? 1
- c. Find (i) the equivalent resistance of the following circuit. (Ans: 15Ω) 3



- (ii) Also calculate the total current flowing through it. (Ans: 1A) 3

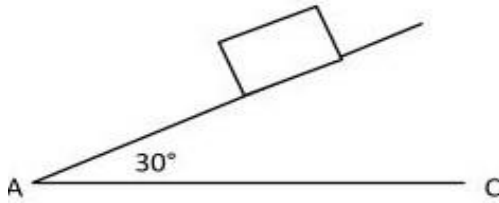
Group 'C'

Give long answers to the following questions

[3×8=24]

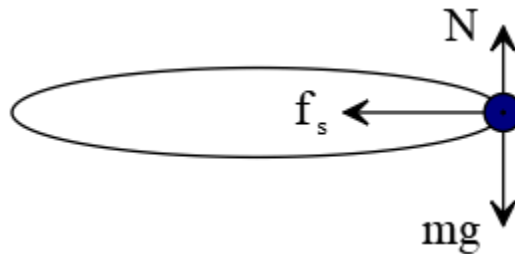
20. a. State the laws of limiting friction. 1
- b. Define the angle of repose and angle of friction. 2

- c. Establish a relationship between the angle of friction and the angle of repose. 2
- d. A block of wood of mass 150 gm. rests on an inclined plane as in the figure. If the coefficient of static friction between the surfaces in contact is 0.30. Find the force parallel to the plane necessary to prevent slipping when the angle of the plane with the horizontal is 30° . **Ans 0.36 N** 3



Ans 0.36 N

21. a. What is the centripetal acceleration of a circular motion? Discuss. 1
- b. Derive the formula for the centripetal force. 3
- c. A 2000 kg car is moving a curve of a radius of 200 m with a speed of 25 m/s. With the help of the following diagram, calculate:
- the centripetal acceleration of the car. 1
 - the force causing this kind of acceleration. 1
 - the minimum coefficient of static friction between the tires and the surface of the road that guarantees a safe turning. 2
- Ans: i. Centripetal acceleration = 3.125 m/s^2 ii. Force causing the acceleration = 6250 N iii. Minimum coefficient of static friction = 0.31



OR

- Define gravitational field strength and write its unit. Also, define **G** 3
 - Write the formula for gravitational field intensity at distance r from the center of the Earth. 1
 - What is its value on the surface of the Earth? 1
 - The escape velocity on earth is 11.2 km/s; what is its value for a planet having doubled the radius and 8 times the mass of the earth? 3
- ans: 22.4 km/s
22. a. Define nuclear fission with examples. 1
- b. Calculate the energy released in the reactions ${}_3\text{Li}^6 + {}_0\text{n}^1 \rightarrow {}_1\text{H}^3 + {}_2\text{He}^4$. Given, Mass of ${}_3\text{Li}^6 = 6.015126 \text{ u}$, Mass of ${}_1\text{H}^3 = 3.016049 \text{ u}$, Mass of ${}_2\text{He}^4 = 4.002604 \text{ u}$, Mass of ${}_0\text{n}^1 = 1.008665 \text{ u}$. 2
- Ans: 4.78 mev
- Explain about P - type extrinsic semiconductor with diagram. 2
 - State Hubble's law and write importance of Hubble's constant. 2
 - What are gravitational waves? 1

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Class: XI

Time: 3 hrs

F.M.: 75

P.M.: 30

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks. (All answers of numerical problems should be expressed in S.I. Unit).

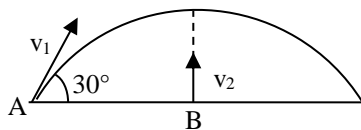
Attempt all questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

- A measurement which on repetition gives same or nearly same result is called measurement.
a. accurate b. average c. precise d. estimated
- A body is projected with velocity v_1 from the point A as shown in the fig. At the same time, another body is projected vertically upwards from B with velocity v_2 . The point B lies vertically below the highest point. For both the bodies to collide, $\frac{v_2}{v_1}$ should be:



- a. 2 b. 0.5 c. $\frac{\sqrt{3}}{2}$ d. 1
- A spring balance carrying a mass of 20 kg in a lift registered 250 N. The acceleration of the lift is.....
a. 2.5 ms^{-2} down b. 2.5 ms^{-2} up c. 3.5 ms^{-2} down d. 3.5 ms^{-2} up
 - A windmill converts wind energy into electrical energy. If v is the wind speed, electrical power output is proportional to
a. v b. v^2 c. v^3 d. v^4
 - A steel wire of cross-sectional area $4 \times 10^{-6} \text{ m}^2$ can withstands a maximum strain of 10^{-3} . Young's modulus of the steel is $2 \times 10^{11} \text{ N/m}^2$. The maximum mass the wire can hold is ($g = 10 \text{ m/s}^2$).
a. 60 kg b. 80 kg c. 100 kg d. 120 kg
 - A 5cm tall object is placed at 20 cm from a concave mirror of focal length 15 cm. What is the nature of image?
a. Virtual, erect and magnified b. Virtual, erect and diminished
c. Real inverted and diminished d. Real, inverted and magnified.
 - An object is moved from infinity to focus of concave mirror, the size of image goes on
a) increasing b) decreasing. c) both increasing and decreasing. d) attaining same size.
 - A convex lens has focal length f . It is cut into two parts along the dotted line as shown in figure the focal length of each part will be:



- a. $\frac{f}{2}$ b. f c. $\frac{3f}{2}$ d. $2f$
- The angular separation between two colors of the spectrum depends upon
a. angle of deviation b. size of the prism c. angle of incidence d. all of these
 - A wire of resistor R is stretched to n times of original length. The resistance of wire will become
a. nR b. n^2R c. n^2r^2 d. $(n - 1)^2R$
 - The energy gap between the conduction band and the valence band of a certain material is 0.7 eV. The material is
a. an insulator b. a conductor c. a semiconductor d. a semimetal

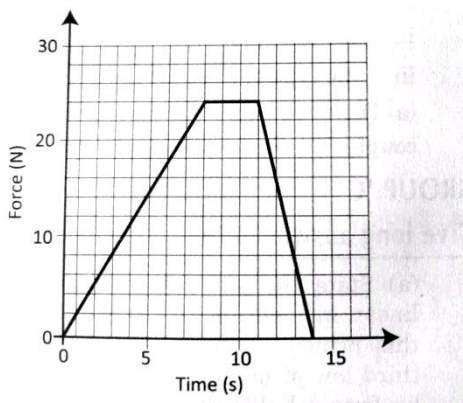
Answers:

1c	2b	3b	4c	5a	6.a	7.a	8.d	9.a	10.b	11c
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Group 'B'

[8×5=40]

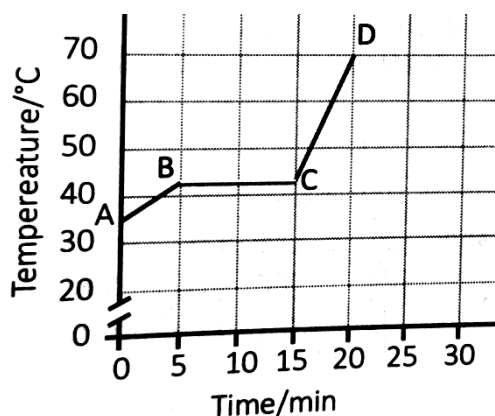
12. A force is applied to a stationary trolley to push it across a horizontal floor. Fig. shows the force applied to the trolley against time.



- a. Calculate the magnitude of the impulse that acts on the trolley. **Ans 6.4Ns** 1
 b. The trolley reaches a velocity of 2.2 m s^{-1} after the force is applied. Assuming friction is negligible; calculate the mass of the trolley. 2
 c. Explain why the trolley continues to move at a constant velocity after the force has been removed. 2

OR

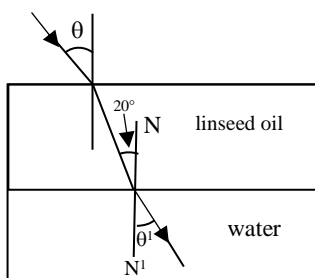
- a. Define stress and strain. 1
 b. Show that elastic potential energy stored per unit volume of the wire is stress x strain. 3
 c. Water is more elastic than air. Why? 1
 13. a. Explain what is meant by the specific latent heat of fusion of a substance. 1
 b. A block of paraffin wax was heated gently, at a steady rate. Heating was continued after the wax had completely melted. The graph of figure shows how the material's temperature varied during the experiment.



- i. For each section of the graph (AB, BC and CD), describe the state of the material. 1
 ii. For each section, explain whether the material's internal energy was increasing, decreasing or remaining constant. 1
 iii. Consider the two sloping sections of the graph. State whether the material's specific heat capacity is greater when it is a solid or when it is a liquid. Justify your answer. 2
 14. a. Define thermal conductivity. 1
 b. How will you find coefficient of thermal conduction of a good conductor by Searle's method? 3
 c. Estimate the power loss through unit area from a perfectly black body at 327°C to the surrounding environment at 27°C ? [$\sigma = 5.67 \times 10^{-8} \text{ Wm}^{-2}\text{K}^{-4}$] 1

Ans: 6889 Watt

15. a. What is the temperature when all molecular motion ceases? 1
 b. Relate pressure coefficient and volume coefficient of a gas using Charles's law and Boyle's law. 3
 c. At pressure of $9.52 \times 10^4 \text{ N/m}^2$, the root mean square speed of the molecules of a gas is 400 ms^{-1} . What is its density? Ans: 1.785 kgm^{-3} 1
16. a. Define total internal reflection. 1
 b. Can total internal reflection be achieved if the object originates in rarer medium? Explain with a diagram to justify your answer. 2
 c. The light beam shown in figure makes an angle of 20.0° with the normal line NN^1 in the linseed oil. Determine the angles θ and θ^1 . (The refractive index of linseed oil is 1.48 and the refractive index of water is 1.33). 2



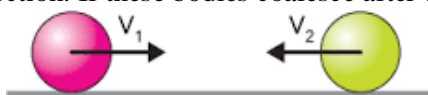
OR

- a. What do you mean by dispersive power? 1
 b. An achromatic converging lens of mean focal length 40 cm is made by combining two lenses of different materials. If the dispersive powers of two lenses are in the ratio 1:3, find the focal lengths of each lens. (Ans: 26.67 cm, -80 cm) 3
 c. Dispersion is caused by refraction and not by reflection, why? 1
17. a. Describe the concept of electric flux of a surface. 1
 b. Derive an expression for electric field intensity outside a charged plane conductor. 2
 c. Two-point charge of $+20 \mu\text{C}$ and $80 \mu\text{C}$ respectively are placed 24 cm apart. Find the position of the point, where electric field is zero. 2
18. a. Define capacitance of a capacitor. 1
 b. Deduce an expression for the capacitance of a parallel plate capacitor. 3
 c. Assuming earth to be an isolated conducting sphere of radius 6400 km. what is the capacitance of the earth? Ans: $71 \mu\text{F}$ 1
19. a. What are the factors on which resistance of a conductor depends? 1
 b. Derive the relation for power in electric circuit $P = IV$. 2
 c. An electric bulb rated for 500W at 100V is used in circuit having a 200V supply. Calculate the resistance R that must be put in series with the bulb so that the bulb delivers 500W. (Ans: 20Ω) 2

Group 'C'

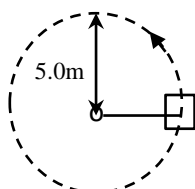
[3×8=24]

20. a. Differentiate between conservative and non-conservative forces. 2
 b. If two bodies of different masses have same kinetic energy, which one has more momentum? 2
 c. A ball of mass 4 kg moving with a velocity 10m/s collides with another body of mass 16 kg moving with 4 m/s from opposite direction. If these bodies coalesce after the impact, compute the loss of energy. 4



Ans: 313.6 J

21. In training military pilots are given various tests. One test puts them in a seat on the end of a large arm which is then spin round at a high speed as shown in figure.



- a. Describe what the pilot will feel and relate this to the centripetal force. 2
- b. At top speed the pilot will experience a centripetal force equivalent to six times his own weight.
 - i. Calculate the speed of the pilot in this test. Ans: 12.25 m/s 2
 - ii. Calculate the number of revolutions of the pilot per minute. Ans: 11.67 rev/min 2
- c. Suggest why it is necessary for pilots to be able to withstand forces of this type.

OR

- a. What is orbital velocity? 1
 - b. Derive formula for orbital velocity and time period of a satellite. 3
 - c. A man can jump 1.5 m. on earth. Calculate the approximate height he might be able to jump on a planet whose density is one quarter of the earth and whose radius is one third that of the earth. Ans: 18 m 4
22. Nuclear energy can be produced by combination or breaking of nucleus at atoms.
- a. What is source of energy in the stars like sun? What are any two fundamental differences between the production of energy in stars and nuclear power plant used in earth? 3
 - b. Describe average binding energy and its effect on stability of the nucleus using the graph. 3
 - c. If 10 gm of the matter is completely annihilated, find quantity of heat produced. 2
 Ans: 18×10^{14} J

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Class: XI

Time: 3 hrs

F.M.: 75

P.M.: 30

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks. (All answers of numerical problems should be expressed in S.I. Unit).

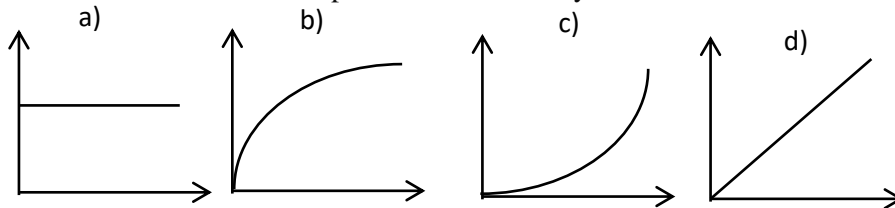
Attempt all questions.

Group 'A'

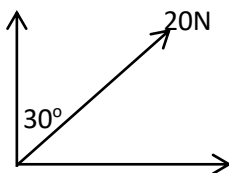
Rewrite the correct option of each question in your answer sheet.

[11×1=11]

- 1. The dimension of K in the equation $W = \frac{1}{2} K x^2$ equals to
 - a) ML^0T^{-2}
 - b) MLT^{-2}
 - c) $M^0L^{-1}T^{-2}$
 - d) M^0LT^{-2}
- 2. A stone is thrown horizontally from the top of a cliff. Air resistance is negligible. Which graph shows the variation of the vertical component of the velocity of stone with time?



- 3. A body of mass 8 kg travels distances of 4, 5 and 6 m respectively in successive seconds. The force acting on it is
 - a) 8 N
 - b) 16 N
 - c) 16 dyne
 - d) 4 N
- 4. The wire is stretched to double its length within the elastic limit. The value of Young's modulus is
 - a) increased.
 - b) decreased.
 - c) constant.
 - d) doubled.
- 5. The horizontal component of the force in given fig is
 - a) 10 N
 - b) 20 N
 - c) $10\sqrt{2}$
 - d) $20\sqrt{2}$



- 6. An object is moved from infinity to focus of concave mirror, the size of image goes on
 - a) increasing
 - b) decreasing.
 - c) both increasing and decreasing.
 - d) attaining same size.
- 7. A glass slab having thickness t and refractive index μ . v is the velocity of light in glass slab and c is the velocity of light in vacuum. Then find time taken to pass the light through the glass slab.
 - a) t/c
 - b) tc/μ
 - c) $\mu t/c$
 - d) μ / c

8. During the minimum deviation produced by the prism,
 a. the angle of incidence is equal to the angle of emergence.
 b. the angle of refraction at first refracting face is equal to angle of incidence at second face.
 c. refracted ray is parallel to the base in equilateral prism.
 d. all of the above.
9. The focal length of a convex lens is f . An object is placed at a distance x from its focus. The ratio of the size of real image to that of the object is
 a) f/x^2 b) x^2/f c) f/x d) x/f
10. A piece of wire of resistance R is bent through 180° at mid-point and the two halves are twisted together. What is the resistance of the wire thus formed?
 a) $R/4$ b) $R/2$ c) R d) $2R$
11. When pure germanium is doped with trivalent impurity like aluminum, the conduction is due to
 a) electrons b) poles c) protons d) holes

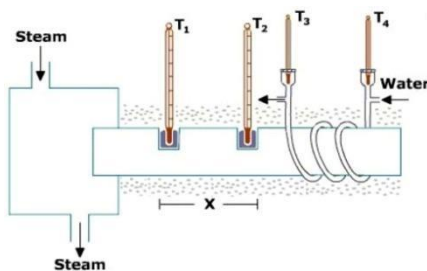
Answers:

1.a	2.d	3.b	4.c	5.a	6.a	7.c	8.d	9.c	10.a	11.d
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Group 'B'

[8 · 5 = 40]

12. You want to move a 500 N crate across a level floor. To start the crate moving, you have to pull with a 230 N horizontal force. Once the crate starts to move, you can keep it moving at constant velocity with only 200 N.
 a) Which Newton's law of motion is applicable in the crate's motion? 1
 b) Draw free body diagram for crate (i) just before it starts to move
 (ii) moving at constant speed. 2
 c) Find the coefficients of static and kinetic friction. **Ans 0.46,0.40.** 2
- OR**
- a) Define Bulk modulus of elasticity. 2
 b) Dhara sunflower oil is packed in a pouch of volume 720 cm^3 . The oil is compressed by increasing the pressure to $5 \times 10^6 \text{ Pa}$. and the volume decreased by 5 cm^3 (i) Calculate the bulk Modulus of the liquid and (ii) the compressibility. 3
- 13.a) Define coefficient of linear expansion. 1
 b) Does the coefficient of linear expansion depend upon the original length? Justify. 2
 c) An iron rod of length 100m at 10°C is used to measure the distance of 2 km on a day when temperature is 40°C . Calculate the error in the measurement. (*Linear expansivity of iron = $12 \times 10^{-6} \text{ }^\circ\text{C}^{-1}$*) 2
- 14.a) Give reason: Steam at 100°C burns more severely than water at 100°C . 2
 b) What is the result of mixing 10 g of ice at 0°C and 100 g of water at 100°C ? (*Latent heat of fusion of ice = 80 cal/g*)
 Ans: 110 gram of water at 83.66°C 3
- 15.a) The apparatus shown in adjoining figure is Searle's apparatus.
 At steady state, when the thermometers show constant readings, the rate of heat flow through any cross-section of the rod is equal to rate of heat absorbed by water. Derive the expression for the thermal conductivity of the rod used. 3



- b) Estimate the rate of heat loss through a glass window of area 2 m^2 and thickness 5 mm when the temperature of the room is 27°C and that of air outside is 5°C . (*Thermal conductivity of glass = $1.2 \text{ W m}^{-1} \text{ K}^{-1}$*) 2
 Ans: 1056 Watt
16. A dentist uses a curved mirror to view teeth on the upper side of mouth. Suppose she wants an erect image with a magnification 2.00 when the mirror is 1.25 cm from the tooth.

- a) What kind of mirror (concave or convex) is needed? Use ray diagram to decide, without performing any calculations. 2
- b) What must be the focal length and radius of curvature of the mirror? (Ans: $f = 2.5 \text{ cm}$, $R = 5 \text{ cm}$) 2
- c) Draw a ray diagram to check your answer in (b). 1

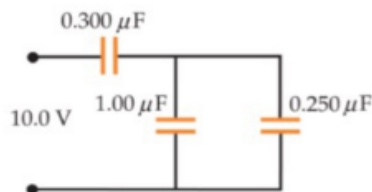
OR

- a) Why do the sunglasses, having curved surfaces do not have any power? 1
- b) Derive an expression for combined power of two thin lenses placed in contact. 2
- c) The curved surface of plano-concave lens has 10 cm radius of curvature and the refractive index of the material is 1.6. Calculate the focal length and hence the power of lens. (Ans: $50/3 \text{ cm}$, 6 D) 2



plano-concave

17. a) State Gauss theorem of electrostatics. 1
- b) Use it to find the electric field intensity at the surface of charged sphere. 3
- c) What would be the electric field inside the sphere? 1
18. a) On what factors does the capacitance of the parallel plate capacitors depend upon? 2
- b) Find the equivalent capacitance from given figure Ans: 4.13 F 3



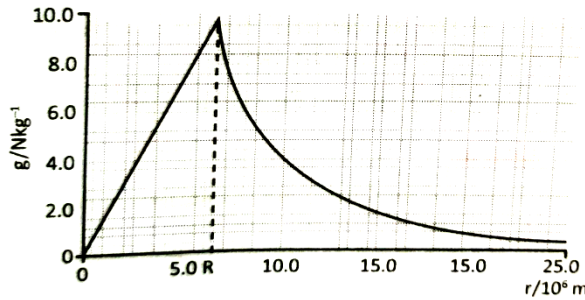
19. a) Define the e.m.f. and p.d. of a cell. 2
- b) The current in a power cable from a power station is 300 A. Calculate the number of electrons passing through the cross-section of the wire in one second. (Ans: 1.87×10^{21}) [$e = 1.6 \times 10^{-19} \text{ C}$] 1
- c) Cross-sectional area of the wire is $9.0 \times 10^{-4} \text{ m}^2$ and the density of the free electrons is $1.6 \times 10^{29} \text{ m}^{-3}$. 1
- i. Calculate the mean drift velocity of the free electrons in the wire. (Ans: $6.076 \times 10^{-8} \text{ m/s}$) 1
- ii. One part of the wire has a smaller diameter than the rest. Explain why the mean drift velocity is different in this part of the wire. 1

Group 'C'

[3×8=24]

20. a) State and prove the principle of conservation of energy. 3
- b) Write the difference between the kinetic energy and the momentum of an object? 2
- c) A vehicle of mass 15 quintal climbs up a hill 20 m high. It then moves on a level road with speed of 30 ms^{-1} . Calculate the potential energy gained by it and its total mechanical energy while running on top of the hill. 3 Ans: 2.94 MJ, 3.615 MJ

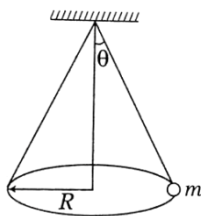
21. Figure shows the variation of the Earth's gravitational field strength with distance from its centre..



- a) Determine the gravitational field strength at a height equal to $2R$ above the Earth's surface, where R is the radius of the Earth. Ans: 1.09 m/s^2 2
- b) A satellite is put into an orbit at this height. State the centripetal acceleration of the satellite. Ans: 1.09 m/s^2 1
- c) Calculate the speed at which the satellite must travel to remain in this orbit. ans: 4563 m/s 2
- d) (i) Frictional forces mean that the satellite gradually slows down after it has achieved a circular orbit. Draw a diagram of the initial circular orbital path of the satellite, and show the resulting orbit as frictional forces slow the satellite down. (ii) Suggest and explain why there is not a continuous bombardment of old satellites colliding with the Earth. 3

OR

- a) Define centripetal force. 1
- b) Show that the acceleration produce on a body moving in the circular motion is $a = \frac{v^2}{r}$. 3
- c) A bob of mass 0.2 kg is whirled in a horizontal circle of radius 0.5 m by a string inclined at 30° to the vertical. Calculate
- i) the tension in the string and Ans: 2.38 N
- ii) the speed of the mass m in the horizontal circle. Ans: 2.24 m/s 2 + 2



22. a) What are meant by mass defect and binding energy of nucleus? 2
- b) Given the nuclear reaction, ${}_{92}\text{U}^{238} \rightarrow {}_{90}\text{Th}^{234} + {}_2\text{He}^4 + Q$
 Calculate the Q-value of the reaction. 4
 (The mass of ${}_{92}\text{U}^{238} = 238.1249 \text{ u}$ ${}_{90}\text{Th}^{234} = 234.1165 \text{ u}$,
 ${}_2\text{He}^4 = 4.0039 \text{ u}$ and $1 \text{ u} = 931 \text{ MeV}$)
 \Ans: 4.18 mev
- c) When a particle and its antiparticle are annihilated the energy released is E . What is mass of each particle? 2
 Ans: $0.05 \times 10^{-16} \text{ E}$

Send - Up Examination - 2081

Class: XI

Time: 3 hrs

F.M.: 75

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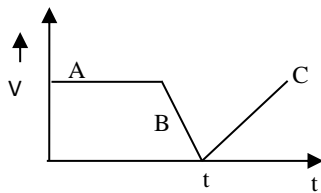
Attempt all questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

- If $x = at + bt^2$, where x is distance travelled by the body in kilometer while 't' is the time in seconds, then the units of 'b' is
 a. kms^{-1} b. kms c. kms^{-2} d. kms^2
- A boat goes across a river with a velocity 12 kmh^{-1} . The magnitude of its resultant speed in flowing water is 13 kmh^{-1} . The velocity of water flow in the river is
 a. 5 kmh^{-1} b. 7 kmh^{-1} c. 9 kmh^{-1} d. 1 kmh^{-1}
- 300 J of work is done in sliding a 2kg block up an inclined plane of height 10 m. Taking $g = 10 \text{ ms}^{-2}$ work done against friction is
 a. 200 J b. 100 J c. zero d. 1000 J
- A block of mass m is placed on a smooth plane of inclination θ with the horizontal. The acceleration of the block along the plane is,
 a. g b. $g/\cos\theta$ c. $g\cos\theta$ d. $g\sin\theta$
- The velocity time - graph of a body is shown in figure. It implies that at point B.



- The force is zero b. There is a force towards motion
 - There is a force which oppose motion d. There is only gravitational force.
- If the length of a wire is reduced to half its load bearing capacity will
 a. decrease to half b. decrease to one fourth c. increases by two d. remains same
 - A shaving mirror of focal length f produces an image n times the size of the object. If the image is real, then the distance of the object from the mirror is
 a. $(n + 1) f$ b. $(n + 1) f/n$ c. $(n-1) f/n$ d. $(n-1) f$
 - To a bird flying in sky a fish in water appears to be at 30 cm from the surface. If refractive index of water with respect to air is $4/3$, then the real distance of fish from the water surface is
 a. 30 cm b. 22.5 cm c. 40 cm d. 60 cm
 - Quark combination of neutron is
 a. uss b. uud c. udd d. dds
 - A wire has resistance 12Ω . It is bent in the form of a circle. The effective resistance between the two opposite points of any diameter is equal to
 a. 12Ω b. 6Ω c. 3Ω d. 24Ω
 - We wish to make a plano-convex lens of focal length 16 cm from glass having refractive index 1.5. It is to be used in air. What should be the radius of curvature of the curved surface?
 a. 8 cm b. 12 cm c. 16 cm d. 24 cm

Answers:

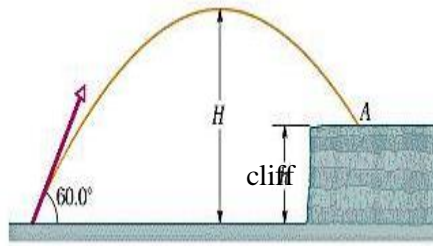
1c	2a	3b	4d	5c	6d	7.b	8.c	9c	10.c	11.a
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Group 'B'

[8×5=40]

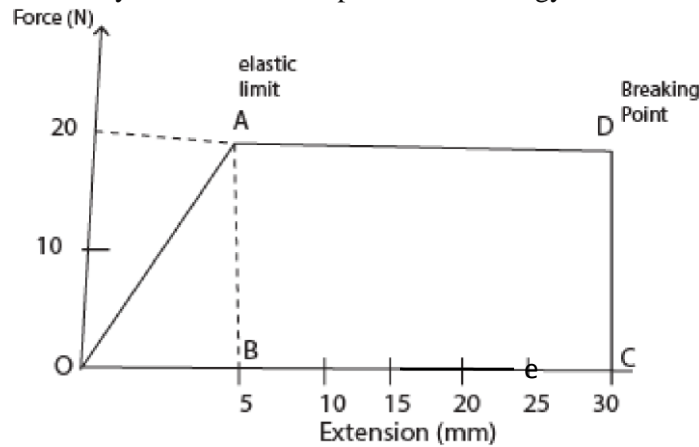
- In the figure, a stone is projected with velocity 42m/s at the cliff of height 'h' with an angle 60° above the horizontal. The stone strikes at A, 5.60s after launching. Find,
 a. height 'h' of the cliff b) speed of the stone just before impact at A and
 c. maximum height 'H' reached above the ground. (take $g= 9.8 \text{ m/s}^2$)
 (Ans:51.8m,27.3m/s,67.5m)

[2+2+1]

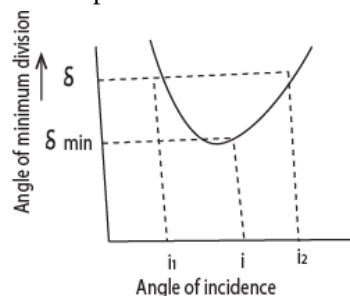


OR

- a. State Hooke's law of elasticity and obtain the expression for energy stored in a stretched wire 3



- b. Figure shows a simplified version of a force - extension graph for a piece of metal. Find
- The strain energy (energy stored) when the metal is stretched to its elastic limit.
 - Work done must be done to break the metal. **Ans: 0.05J, 0.55J** 3
13. a. The specific latent heat of fusion of ice is 80 Cal/gm. What does it mean? 1
- b. How much heat is required to convert 10 gm of ice at -10°C into steam at 100°C ? (Specific heat capacity of ice is $0.5 \text{ Cal/g}^{\circ}\text{C}$, latent heat of vaporization ($L_v = 540 \text{ Cal/g}$), $L_f = 80 \text{ cal/gm}$). 3
- Ans: 30450 J
- c. When you come out of swimming pool, you feel cold. Why? 1
14. a. State Boyles law and Charles law. 1
- b. Describe how these laws are combined to derive ideal gas equation. 3
- c. Obtain the numerical value of universal gas constant R also mention its physical significance. 2
15. a. What is thermal conductivity? 1
- b. One end of a metal bar 0.001 m^2 in cross section and 0.5 m long is in contact with steam at atmospheric pressure. The other end is in contact with ice at 0°C . If ice melts at the rate of 13.8 g per minute. Find the thermal conductivity of the metal. **Ans: $386.4 \text{ Wm}^{-1}\text{K}^{-1}$** 3
- c. Eskimos make double walled houses of blocks of ice. Why? 1
16. a. What does the given curve represent? Define it. 1



- b. What are the conditions for minimum deviation? 1
- c. Is maximum deviation can occur in a prism? If yes, obtain the condition for it. 1
- d. A ray of light is refracted through a prism of angle 60° . Find the angle of incidence so that the emergent ray just grazes in the second face. Refractive index of prism is 1.45 (**Ans: 24.2°**) 2

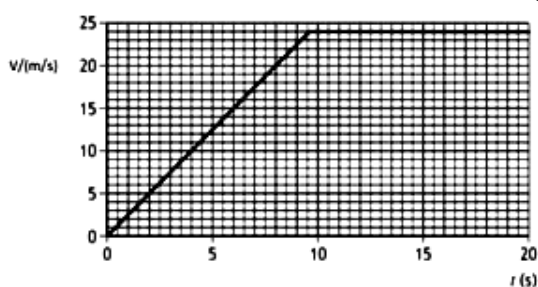
OR

- a) What are spherical mirrors? Write down the sign conventions of object distance, image distance and focal length for these mirrors. 2
- b) Draw the diagram of Lateral Shift with angle of incidence. 2
- c) Why does the clear pool of water appears to be shallower than it actually is 1
17. a. Sketch an electric field pattern around two charges equal in magnitude and opposite in sign. 2
- b. If two charges of magnitude $1\mu\text{F}$ and $-2\mu\text{F}$ are kept at two vertices of an equilateral triangle of length 2m, calculate the value of electric field at the third vertex due to these charges. Ans: 5952.8 N/C
18. a. Define capacitance of a capacitor. 1
- b. Deduce an expression for the capacitance of a parallel plate capacitor. 2
- c. Assuming earth to be an isolated conducting sphere of radius 6400 km. what is the capacitance of the earth? 2
19. a. What do you mean by power of heater 4 KW? 1
- b. Calculate the resistance of above mentioned heater when it is connected to 200V source. (Ans: 10Ω) 2
- c. What must be done in order to increase heat to the heater? Explain. 2

Group 'C'

[3×8=24]

20. A box at rest is accelerated by a rope attached with a motor. The velocity-time graph given below shows the pattern of its motion for 20 s.
- a. If the box is pulled with constant unbalanced force 10N. Show that the initial acceleration of the box is 2.5 m/s^2 , and calculate it's mass. 2+1
- b. After 2.0 second the box is being pulled by a constant force 12 N. Determine the size of frictional forces acting on the box at this time. 2
- c. Determine the distance of the box travels along the ground at 8.0 s. 3

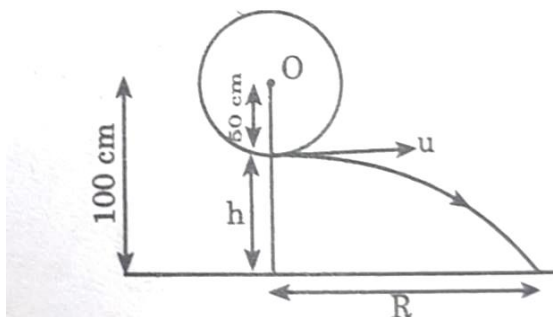


21. a. The maximum vertical distance through which a fully dressed astronaut can jump on earth is 0.5 m. estimate the maximum vertical distance through which he can jump on the moon which has a mean density two-third that of the earth and radius one-fourth that of the earth. Ans: 3m 3
- b. Determine the ratio of time duration of his jump on the moon to that his jump on the earth assuming that the initial velocity on both places are equal. Ans: 6:1 2
- c. Satellite of the earth moves in a circular orbit with a speed of 6.2 kms^{-1} . Find the time of one revolution and its centripetal acceleration. Ans: 107.5 minutes, 6.04 m/s^2

OR

A stone of mass 500 gm is attached to a string of length 50 cm which will break if the tension in it exceeds 20 N. The stone is whirled round in a vertical circle, the axis of rotation being at a height of 100 cm above the ground. The angular speed is very slowly increased until the string breaks.

- a) In what position is the break mostly like to occur and what is its angular velocity? Ans: 7.78 rad/s 2



- b) Determine its linear velocity. Ans: 3.89 m/s .1
 c) Illustrate the motion drawing vertical circle and locate the position from which it detach. 2
 d) Where will the stone hit the ground? 3
22. a. Explain how Rutherford (- scattering experiment suggested that the nucleus of an atom is very small, very dense and positively charged. 3
 b. Consider the α particle carry average kinetic energy of $2.50 \times 10^{10} \text{J}$. Calculate the maximum size of the gold nucleus. 3
 (Atomic no. of gold is 79 and $e = 1.60 \times 10^{-19} \text{C}$)
 Ans: $1.45 \times 10^{-36} \text{m}$
 a. Explain why the radius of the gold nucleus must be smaller than the value calculated in (22.b) above. 2

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Class: XI

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F.M.: 75

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Attempt all questions.

Group 'A'

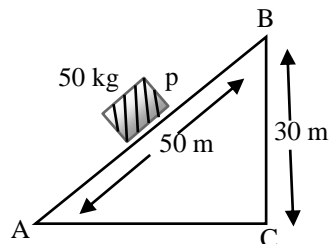
Rewrite the correct option of each question in your answer sheet.

[11×1=11]

- In the equation $F = \rho A v^x$, F = force, A = area, ρ = density, v = velocity. The value of x is
 a. -1 b. +2 c. -2 d. +1
- The x - component of a vector making an angle of 30° with the horizontal is 3. Its y - component is
 a. 3 b. $\sqrt{3}/2$ c. $3/\sqrt{2}$ d. $\sqrt{3}$
- A power station has an efficiency of 40% and generates 1000 MW of electric power. What is the input power and the wasted power?

	Input power/MW	Wasted power/ MW
A	1000	400
B	1000	600
C	1400	400
D	2500	1500

- In the figure a load box p is pulled up from A to B. The coefficient of friction between load box and the inclined plane is 0.4. The work done will be:
 a. 15J b. 23J c. 28J d. 33J



- The phenomenon used in optical fibers for transmission of light energy is
 a. Total internal reflection b. Scattering c. Diffraction d. Refraction.
- If the refractive index of the material of equilateral prism is 1.5, then angle of minimum deviation of the prism.
 a. 30° b. 45° c. 60° d. 37.18°

7. The focal length of a convex lens will be maximum for
 a. Blue light b. Yellow light c. green light d. red light
8. The two thin lenses of focal length +60 cm and - 20 cm are placed in contact the focal length of combination is
 a. + 5 cm b. - 15 cm c. + 30 cm d.- 30 cm
9. If two bulbs whose resistances are in the ratio 1:2 are connected in series. Then their powers will be in the ratio:
 a. 1: 2 b. 1: 1 c. 2: 1 d. 1: 4
10. Which is the particle antiparticle pair?
 a. Electron and proton b. Electron and positron
 c. Proton and neutron d. Neutron and electron.
11. A vector remains unchanged if it is
 a. multiplied by a scalar b. divided by its own magnitude
 c. rotated through an angle of 180° d. shifted parallel to itself

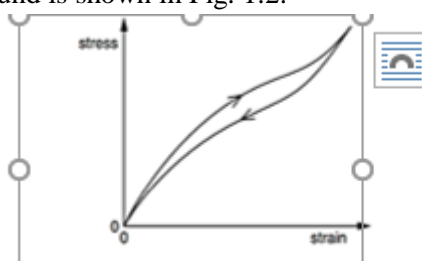
Answers:

1.b	2.d	3.d	4.b	5.a	6.d	7.d	8.d	9.a	10.b	11.d
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Group 'B'

[8×5=40]

- 12) a. Why is potential energy stored in a stretched wire? Explain [1]
 b. The walls of the tyres on a car are made of a rubber compound. The variation with stress of the strain of a specimen of this rubber compound is shown in Fig. 1.2.



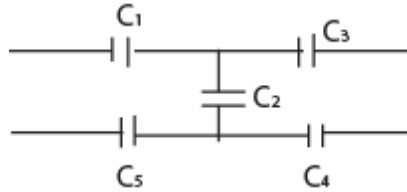
As the car moves, the walls of the tires end and straighten continuously. Use Fig. 1.2 to explain why the walls of the tires become warm. 1

- c. A rubber cord of catapult has a cross sectional area 1 mm² and its total up stretched length 10 cm. It is stretched to 12 cm and then released to project a missile of mass 5 g. Taking young's modulus of rubber is 5 × 10⁸ N/m². Find the tension in the cord and the velocity of projection of missile? **Ans 100N, 20m/s** 3

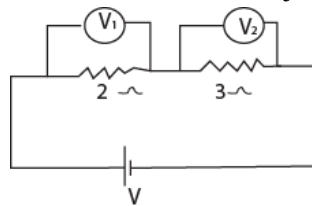
OR

- a. Write down the equation that defines linear momentum. Is the momentum a vector or a scalar quantity? 1
 b. A trolley of mass 2.0 kg is moving with a velocity 0.6 m/s It collides with a second, stationary trolley of mass 4.0kg. They stick together and move off at 0.2 ms⁻¹.
 i) Show that momentum is conserved in this collision. **Ans p=1.2 kgm/s**
 ii) Explain whether the collision is elastic or inelastic. **Ans inelastic** 2
13. a. What is meant by specific heat capacity heat capacity of a solid? Write their units. 2
 b. A block of aluminium has a mass of 0.50 kg. It is heated using a 36W heater for 3 minutes and its temperature increases from 12°C. Calculate the specific heat capacity of aluminium. 2
Ans: 540 Jkg⁻¹K⁻¹
- c. If you add heat to an object, do you necessarily increasing its temperature? Justify your answer. 1
14. a. Why does warm air rise? 1
 b. A bar 0.2m in length and of cross-sectional area 2.5×10⁻⁴ m² is ideally lagged. One end is maintained at 373 K while the other end is maintained at 273K by immersing in melting ice. Calculate the rate at which the ice melts owing to the flow of heat along the bar. [K = 4×10²Wm⁻¹k⁻¹. and L_i= 3.4×10⁵J/kg] 3
Ans: 1.47 x 10⁻⁴ kgs⁻¹

- c. What is the physical meaning of emissivity? 1
15. a. Mention the two postulates of kinetic theory of gas. 1
- b. What do you mean by an ideal gas? Write its equation. 1
- c. A cylinder of gas has a mass of 10.0 kg and a pressure of 8.0 atmospheres at 27°C. When some gas is used in a cold room at -3°C, the gas remaining in the cylinder at this temperature has a pressure of 6.4 atmospheres. Calculate the mass of gas used. Ans: 1.1 kg
16. a. What is meant by relative permittivity? 1
- b. Is it possible to charge a capacity to any potential? 1
- c. In the given circuit, applied potential between ab is 220 V. What is the equivalent capacitance of network between a and b? Ans: 2.52 F
- Given $C_1 = C_5 = 8.4 \text{ F}$, $C_2 = C_3 = C_4 = 4.2 \text{ F}$ 3



17. a. Draw the ray diagram showing the formation of real image by a concave lens. 1
- b. A convex lens is immersed in water will its focal length change? Explain. 2
- c. An object is placed at distance 1.5 m from a screen and a convex lens is interposed between them. The magnification produced is 4. What is the focal length of the lens? (Ans: 0.24m) 2
- OR
- a. How would you distinguish concave mirror, convex mirror and plane mirror without touching them? 3
- b. When an object is placed 20 cm from a concave mirror a real image magnified three times is formed. Find
- i. The focal length of the mirror (Ans: 15 cm) 2
- ii. Where the object must be placed to give a virtual image three times the height of the object. (Ans: 10
18. a. Define electric potential at a point. 1
- b. Does the electric potential increase or decrease along the electric line of force. 1
- c. Two positive charge $12\mu\text{c}$ and $8\mu\text{c}$ respectively are 10cm apart. Find the work done in bringing them 4cm closer. (Assume $1/4\pi\epsilon = 9 \times 10^9 \text{ Nm}^2\text{c}^{-2}$) (Ans: 3.25J) 3
19. A p.d. of V drives current through two resistors of 2Ω and 3Ω joined in series.

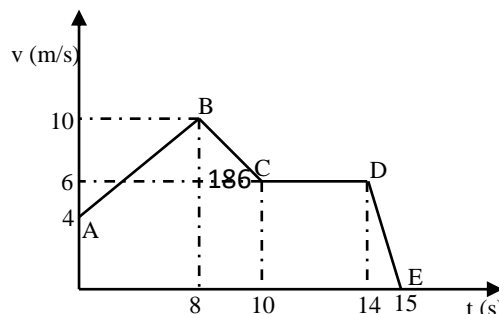


- a. If voltmeter v_1 reads 4v what is the current in 2Ω ? Ans: 2A
- b. What is the current in 3Ω ? Ans: 2A
- c. What does v_2 read? Ans: 6V
- d. What is the value of v? Ans: 10V
- e. Find the value of the single equivalent resistor which, if it replaced the 2Ω and 3Ω resistor in series, would allow the same current to flow when joined to the same p.d. V. Ans: 5Ω 5

Group 'C'

[3×8=24]

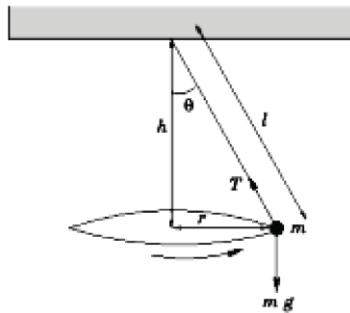
20. The graph shows velocity-of a body in straight line. following questions.



time graph for the motion
Study it and answer the

- State the intervals where the body is (a) accelerating and (b) retarding 15sAns :(0-8s),and(8s-10s , 14s to 15s) 1
- What is the initial velocity of the body? What is the maximum velocity attained by it during its motion? 1
- What is the total time taken by the body to come at rest from beginning? a. (Ans: 15 s) 1
- At which interval the velocity is uniform? Ans: (10s to 14s) 1
- Calculate the distance covered by body during its motion in time $t = 8$ sec to $t = 10$ sec. 2
- What is the total distance covered by body during entire the motion? 2

21. The given figure is of a conical pendulum.



The circle has a radius of 0.8 m and length of the thread of pendulum is 1m. The object travels around the path with a constant speed.

- Explain why the object is accelerating, even though it is travelling at a constant speed. 2
- The object has a mass of 2 kg. Calculate the tension in the thread. Also calculate the time period of revolution Ans: 2.5N, 2s 3
- Calculate the angular velocity, translational velocity and the centripetal force. 3
Ans: π rad/s, 3.14 m/s, 19.74 N

OR

- If the force of gravity acts on all bodies is proportional to their masses, why does a heavy body not fall faster than a light body? 2
 - The mass of planet Jupiter is 1.9×10^{27} kg and that of the sun is 1.99×10^{30} kg. The mean distance of the Jupiter from the sun is 7.8×10^9 m. Calculate gravitational force which the sun exerts on Jupiter. Assuming that Jupiter moves in a circular orbit around the sun, calculate the orbital speed of the Jupiter. 3
Ans: Force= 4.25×10^{23} N Orbital Speed: 13.7 km/hr
 - According to Newton law of gravitation, every particle of matter attracts every other particle. But bodies on the surface of earth never move towards each other on account of this force of attraction. Why? 2
 - According to Newton's Law Of gravitation, every particle of matter attracts every other particle. But bodies on the surface of earth never move towards each other on account of this force of attraction. Why? 1
22. Differentiate between nuclear fission and fusion. 2
- A fusion reaction is more energetic than fission reaction Justify. 1
- Explain the terms mass defect and binding energy. 2
 - A city requires 10^7 Watts of electrical power on the average. If this is to be supplied by a nuclear reactor of efficiency 20%. Using $^{92}\text{U}_{235}$ as the fuel source. Calculate 3
i. The energy released by the reactor for one day. Ans: 4.32 $\times 10^{12}$ J

ii. How much fuel is required per day operation (Energy released by 1 atom of ${}_{92}\text{U}^{235} = 200\text{MeV}$)

Ans: 0.0527 kg

NEB-Model Questions - 2078

Time: 3 hrs

Full marks: 75

Pass marks: 27

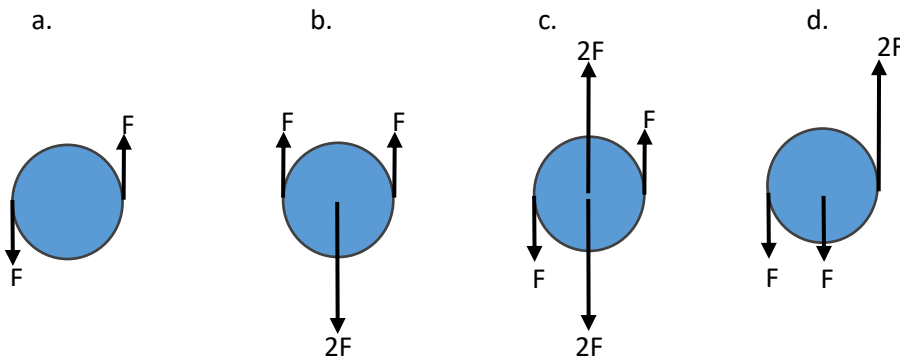
Attempt all questions

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11.1=11]

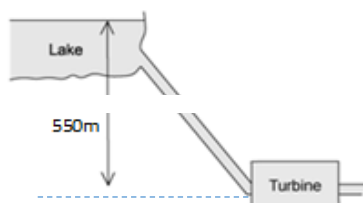
- A meter rule is used to measure the length of a piece of string in a certain experiment. It is found to be 20 cm long to the nearest millimeter. How should this result be recorded in a table of results?
a) 0.2000m b) 0.200m c) 0.20m d) 0.2m
- Forces are applied to a rigid body. The forces all act in the same plane. In twchich diagram is the body in equilibrium?



- An athlete makes a long jump and follows a projectile motion. Air resistance is negligible. Which one of the following statements is true about the athlete?
a. The athlete has a constant horizontal and vertical velocities.

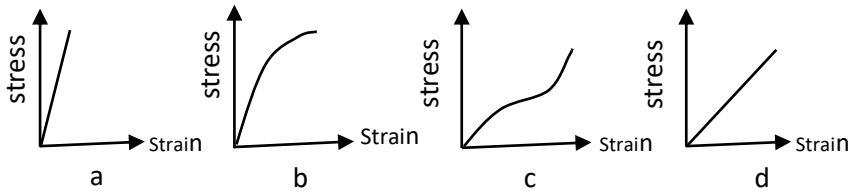


- The athlete has a constant horizontal velocity and constant downward acceleration.
 - The athlete has a constant upward acceleration followed by a constant downward acceleration.
 - The athlete has a constant upward velocity followed by a constant downward velocity.
- At Kulekhani-I Hydro-power station, water flows from Indra Sarowar into the turbines that are a vertical distance of 550 m below the lake, as shown in the diagram. Generally, 780 000kg of water flows into the turbines every minute. The turbines have the efficiency of 85%. What is the output power of the turbines?



- a. 71 mw b. 60mw c. 4.2 gw d. 3.6 gw

5. Graphs of stress-strain for four different materials are shown below. Which graph represents the stiffest material?



6. A boy walks towards a stationary plane mirror at a speed of 1.2 ms^{-1} . What is the relative speed of approach of the boy and his image?
 a. zero b. 1.2 ms^{-1} c. 2.4 ms^{-1} d. 1.44 ms^{-1}
7. The critical angle between an equilateral prism and air is 45° . What happens to the incident ray perpendicular to the refracting surface?
 a. It is reflected totally from the second surface and emerges perpendicular from the third surface.
 b. It gets reflected from second and third surfaces and emerges from the first surface
 c. It keeps reflecting from all the three sides of the prism and never emerges out.
 d. After deviation, it gets refracted from the second surface.
8. In the formation of a rainbow, the light from the sun on water droplets undergoes which of the following phenomenon/phenomena?
 a. Dispersion only b. Only total reflection.
 c. Dispersion and total internal reflection d. Scattering
9. In what unit is the power of lens measured?
 a. Watt b. Metre c. Dioptre d. Hertz
10. A piece of wire of resistance R is bent through 180° at mid-point and the two halves are twisted together. What is the resistance of the wire thus formed?
 a. $R/4$ b. $R/2$ c. R d. $2R$
11. What are the elementary particles with half spin called?
 a. Quarks b. Bosons c. Fermions d. Hadrons

Answers:

1b	2b	3b	4b	5a	6c	7.a	8.c	9.c	10.a	11.c
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Group 'B'

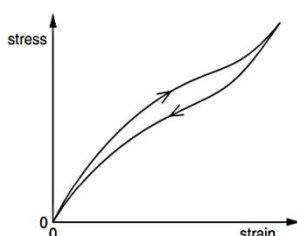
Write short answer to the following questions.

(8×5=40)

12. (a) State the law of conservation of momentum. [2]
 (b) A jumbo jet of mass $4 \times 10^5 \text{ kg}$ travelling at a speed of 5000 m/s lands on the airport. It takes [2] minutes to come to rest. Calculate the average force applied by the ground on the aeroplane. **Ans: $1.67 \times 10^8 \text{ N}$.** [2]
 (c) After landing the aeroplanes' momentum becomes zero. Explain how the law of conservation holds here [1]

OR

- (a) State Hook's law. [2]
 (b) The walls of the tyres on a car are made of a rubber compound. The variation with stress of the strain of a specimen of this rubber compound is shown in Fig. 1.2.



As the car moves, the walls of the tyres end and straighten continuously. Use Fig. 1.2 to explain why the walls of the tyres become warm. [3]

13. (a) What is meant by specific latent heat of vaporization of water = 2.26MJkg^{-1} ? [1]
 (b) A 1.0kW kettle contains 500g of boiling water. Calculate the time needed to evaporate all the water in the kettle. (Specific latent heat of vaporization of water = 2.26MJkg^{-1}). [3]

Ans: 18.83 minute

- (c) Explain why the actual time needed is a little longer than the time calculated in 2(b). [1]
 14. (a) State any three properties of an ideal gas as assumed by the kinetic theory of gas. [3]
 (b) A student needed to use the ideal gas for a certain experiment. But, the ideal gas does not exist. Suggest what two different things this student could do to solve his problem. [2]
 15. (a) Define temperature gradient in an object. [1]
 (b) An electric kitchen range has a total wall area of 1.40 m^2 and is insulated with a layer of fiber glass that has a temperature of 175°C and its outside surface is 35°C . The fiber glass has a thermal conductivity of $0.040\text{ Wm}^{-1}\text{K}^{-1}$. Calculate the rate of flow of heat through the insulation, assuming the fibre as a flat slab of area of 1.40 m^2 . Ans: 5.6 Js^{-1} . [3]
 (c) How might the rate of conduction be affected if the fiber absorbs moisture? Justify your answer. [1]

16. Figure 5.1 shows a ray of light is entering and emerging through a part of a convex lens.

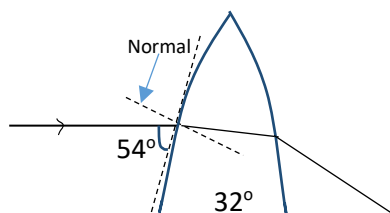


Fig. 5.1

- (a) Define 'convex lens', and state one daily application of it. [2]
 (b) Explain why this lens is also called converging lens? [1]
 (c) Calculate the refractive index of the material of the lens shown in the figure. [2]

OR

- (a) Define 'concave mirror' and state one daily application of it. [2]
 (b) A certain projector uses a concave mirror for projecting an object's image on a screen. It produces an image that is 5 times bigger than the object and the screen is 5m away from the mirror as shown in Fig. 5.2.

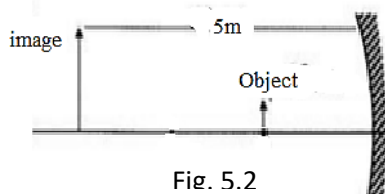


Fig. 5.2

- (i) Give reason why is the image larger than the object? [1]
 (ii) Calculate the focal length of the mirror. [2]
 17. (a) Sketch an electric field pattern around two identical negative point charges shown below. [2]

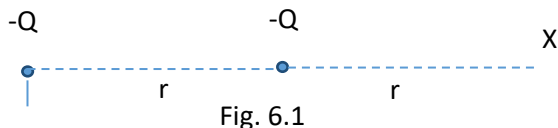


Fig. 6.1

- (b) Obtain an equation, in terms of Q and r , for the field strength at point X due to two charges shown in shown in Fig. 6.1 [3]
 18. (a) Define capacitance of a parallel plate capacitor and state one application of it in electric circuit. [2]

- (b) Three capacitors each of $1000\mu\text{F}$ are connected in an electric circuit as shown below.

ans: $3000\mu\text{F}$

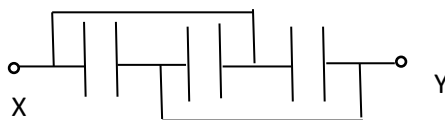


Fig. 7.1

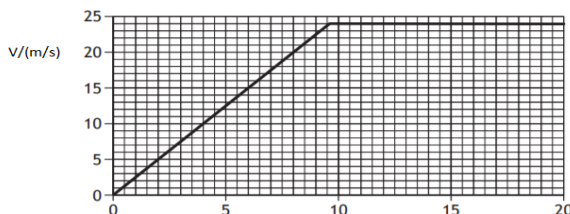
- (i) Identify the type of combination shown in Fig. 7.1, and calculate the effective capacitance of the combination. [1+2]
19. (a) What is it meant by power of a heater is 2 kW ? [1]
 (b) Calculate the resistance of the above mentioned heater when it is connected to 220V source. (Ans: 24.2Ω) [2]
 (c) Suggest what changes must be done to the heater so that it gives more heat. Justify your answer. [2]

Group 'C'

Give long answer to the following questions

($3 \times 8 = 24$)

20. A box at rest is accelerated by a rope attached with a motor as shown in the Fig 2.1. The velocity-time graph given below shows the pattern of its motion for 20 s .



- (a) If the box is pulled with constant unbalanced force 10N . Show that the initial acceleration of the box is 2.5 ms^{-2} , and calculate its mass. [2+1]
 (b) After 2.0 second the box is being pulled by a constant force 12 N . Determine the size of frictional forces acting on the box at this time. [2]
 (c) Determine the distance of the box travels along the ground at 8.0s . Ans : $4\text{kg}, 2\text{N}, 80\text{m}$ [3]
21. A boy is operating a remote-controlled toy car on a horizontal circular track, as shown in the track has a radius of 1.8 m and the car travels around the track with a constant speed.

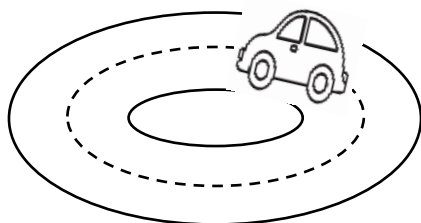


Fig. 10.1

- (i) Explain why the car is accelerating, even though it is travelling at a constant speed. [2]
 (ii) The car has a mass of 0.50 kg . The boy now increases the speed of the car to 6.0 m s^{-1} . The total radial friction between the car and the track has a maximum value of 7.0 N . Show by calculation that the car cannot continue to travel in a circular path. [3]
 (iii) The car is now placed on a track, which includes a raised section. This is shown in

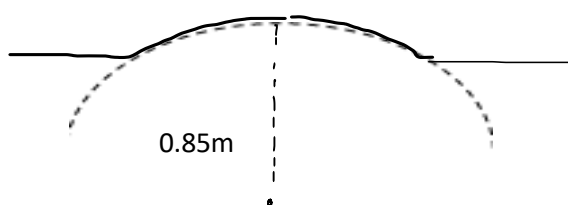
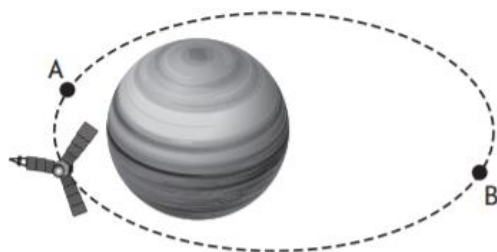


Fig. 1.2

The raised section of the track can be considered as the arc of a circle, which has radius r of 0.85 m. The car will lose contact with the raised section of track if its speed is greater than v_{\max} . Show that v_{\max} is given by the relationship $v_{\max} = \sqrt{rg} \sqrt{rg}$.

OR

Juno is a NASA orbiter with a mission to survey Jupiter. It is in an elliptical orbit around Jupiter as shown in the figure below.



The gravitational potential at point A in the orbit of Juno is $-1.70 \times 10^9 \text{ J kg}^{-1}$.

- State what is meant by a gravitational potential at point A is $-1.70 \times 10^9 \text{ J kg}^{-1}$. [2]
 - At point B, Juno is $1.69 \times 10^8 \text{ m}$ from the centre of Jupiter. If the mass of Jupiter is $1.90 \times 10^{27} \text{ kg}$, calculate the gravitational potential at point B. ans: $-7.49 \times 10^8 \text{ J/kg}$ [3]
 - The mass of Juno is $1.6 \times 10^3 \text{ kg}$. Determine the change in gravitational potential energy if Juno moves from Point A to Point B. ans: $1.52 \times 10^{12} \text{ J}$ [3]
22. (a) Explain how Rutherford's α -scattering experiment suggested that the nucleus of an atom is very small, very dense and positively charged. [3]
- (b) Considering that the α -particles carry average kinetic energy of $2.00 \times 10^{10} \text{ J}$, calculate the maximum size of the gold nucleus. [Atomic number of gold is 79 and $e = 1.60 \times 10^{-19} \text{ C}$] [3]
 Ans: $1.82 \times 10^{-36} \text{ meter}$
- (c) Explain why the radius of the gold nucleus must be much smaller than the value calculated in 11(b) above. [2]

NEB Final Examination - 2078

Time: 3 hrs

Full marks: 75

Pass marks: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt All Questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11·1=11]

- If p is the momentum of an object of mass m , the expression p^2/m has base unit identical to
 - Energy
 - Force
 - Power
 - velocity
- The figure shows displacement – time graph of a particle moving on the X-axis.

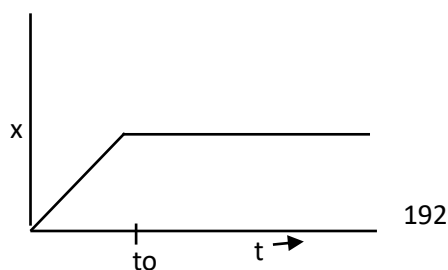
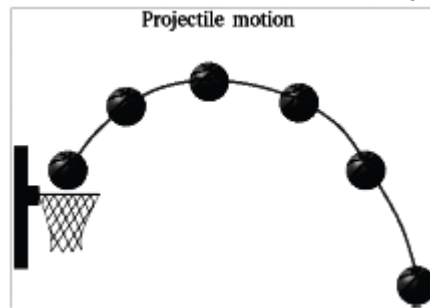


Figure 1

Which of the following statement is true?

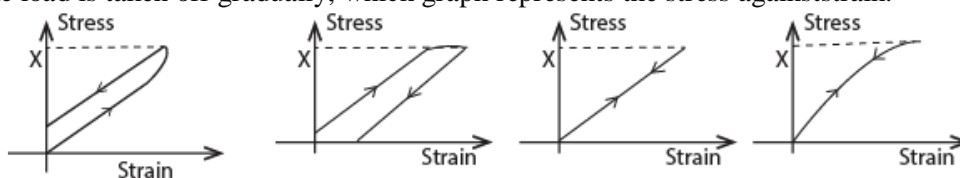
- The particle is continuously going to +ve x direction.
 - The particle is at rest.
 - The velocity increases upto a time t and then becomes constant.
 - The particle moves at a constant velocity upto a time to and then stops.
3. A basketball player throws a basketball towards the net from a distance and the path of the ball is shown. Which one of the following statements is true about the basketball's trajectory?



- It has a constant upward acceleration followed by a constant downward acceleration.
 - It has a constant horizontal velocity and constant downward acceleration.
 - It has constant horizontal and vertical velocities,
 - It has a constant upward velocity followed by a constant downward velocity
4. A power station has an efficiency of 40% and generates 1000 MW of electric power. What is the input power and the wasted power?

	Input power/MW	Wasted power/ MW
A	1000	600
B	1000	400
C	1400	400
D	2500	1500

5. A metal wire is gradually loaded until it passes the elastic limit to the point where the stress is x. The load is taken off gradually, which graph represents the stress against strain.

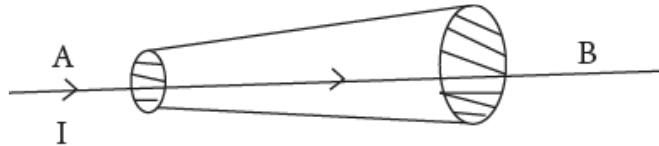


6. A light ray is passed from one medium of refractive index μ_1 to another medium of refractive index μ_2 as shown in figure. The correct relation between μ_1 and μ_2 is:



- $\mu_1 > \mu_2$
 - $\mu_1 < \mu_2$
 - $\mu_1 = \mu_2$
 - No relation between μ_1 and μ_2
7. In the Sun's spectrum, there are several visible and invisible spectrums. If blue and green light are passed through a transparent prism, then deviation of green light will be:
- Equal so that they will form achromatic condition.
 - Greater than that of blue light.
 - Smaller than that of blue light.
 - Can't be predicted.

8. The two thin lenses of focal length +60 cm and - 20 cm are placed in contact. The focal length of combination is
 a. + 5 cm b. - 15 cm c. + 30 cm d.- 30 cm
9. If the refractive index of diamond is 2.4, the velocity of light in diamond is
 a. $1.25 \times 10^8 \text{m/s}$ b. $2.5 \times 10^8 \text{m/s}$ c. $1.5 \times 10^8 \text{m/s}$ d. $2.0 \times 10^8 \text{m/s}$
10. A wire has a non-uniform cross-section. It carries a current “i”. Then the drift velocity of electron:



- a) Remains constant from A to B. b) Decreases on moving from A to B.
 c) Increases on moving from A to B. d) First decreases and then becomes constant.
11. Which is the particle antiparticle pair?
 a. Electron and proton b. Electron and positron c. Proton and neutron d. Neutron & electron.

Answers:

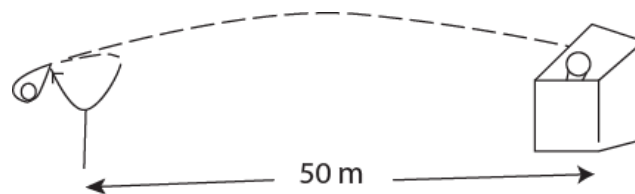
1a	2d	3b	4d	5b	6.c	7.c	8.d	9.a	10.b	11.b
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Group 'B'

Write short answer to the following questions.

(8× 5=40)

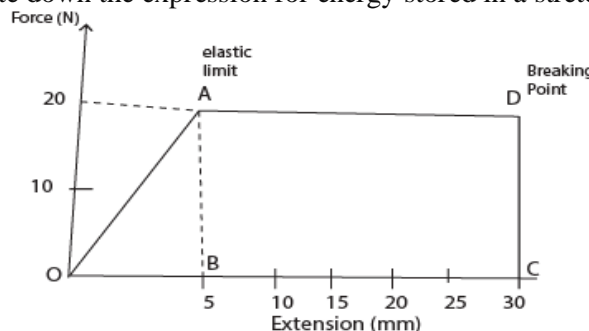
12. A fair ground game requires the player to catapult a ball towards a target to some points. The ball is required to reach a target at horizontal distance of 50 m away at the same vertical height, as shown in figure.



- a) The time taken by the ball to reach the target is 2.0 seconds. Calculate the angle to the horizontal at which the ball is launched. . **Ans: 21.4 degree** 3
- b) During another launch, the catapult exerts a force on the ball of 9.0 N at 40° to the horizontal at the time of release. Draw a labeled vector diagram to determine the resultant force acting on the ball at the time of release. Weight of ball = 2.0 N. **Ans:6.89 N** 2

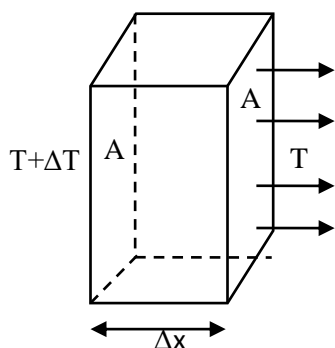
Or

- a) State Hooke's law and write down the expression for energy stored in a stretched wire 2

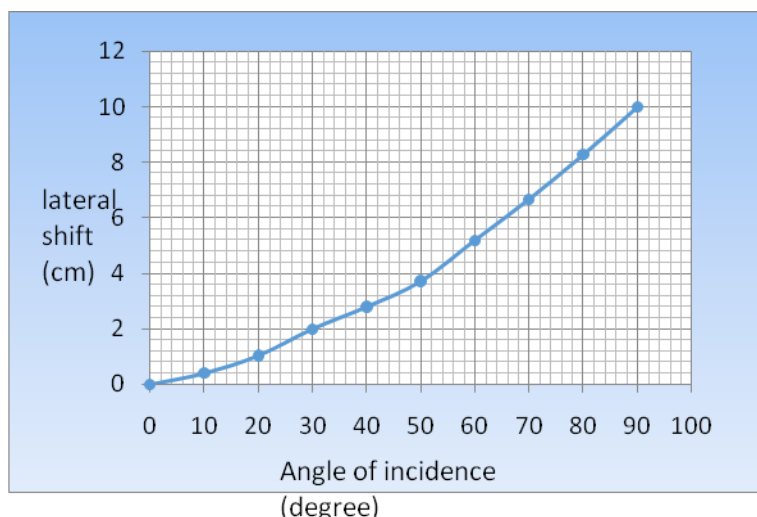


- b. Figure shows a simplified version of a force - extension graph for a piece of metal. Find
 i) The strain energy (energy stored) when the metal is stretched to its elastic limit.

13. Consider the slab as shown in figure. Suppose that $\Delta x = 24.9 \text{ cm}$, $A = 1.8 \text{ m}^2$ and the material is of copper. If $T = -12.0 \text{ }^\circ\text{C}$ and $\Delta T = 136 \text{ }^\circ\text{C}$ and steady state is reached, then



- (a) Find the temperature gradient, 1.5
Ans: $5.46 \text{ }^\circ\text{C cm}^{-1}$
- (b) The rate of heat transfer and 1.5
Ans: 394236 Js^{-1}
- (c) The temperature at point 11.0 cm from the high- temperature end. (thermal conductivity of copper is: 401 W/mK) 2
Ans: $87.91 \text{ }^\circ\text{C}$
14. a) What is meant by specific heat capacity of a solid? 2
 b) A block of aluminium has a mass of 0.50 kg. It is heated using a 36W heater for 3 minutes and its temperature increased for $12 \text{ }^\circ\text{C}$ to $36 \text{ }^\circ\text{C}$. Calculate the specific heat capacity of aluminium. 3
Ans: $540 \text{ Jkg}^{-1} \text{ K}^{-1}$
15. What is the difference between average speed and root mean square (rms) speed of gas molecules? 1
 The atmosphere of Mars is mostly CO_2 (molar mass 44 g/mol) under a pressure of 650 Pa , which we shall assume constant. In many places the temperature varies from $0.0 \text{ }^\circ\text{C}$ in summer to $-100 \text{ }^\circ\text{C}$ in winter. Over the course of a Martian year, what are the ranges of
- a) the rms speeds of CO_2 molecules and 2
Ans: 313.08 cms^{-1} to 393 cms^{-1} .
- b) the density (in mol/m^3) of the atmosphere? 2
16. Study the following graph showing variation of lateral shift with angle of incidence on a glass slab and answer the following questions.

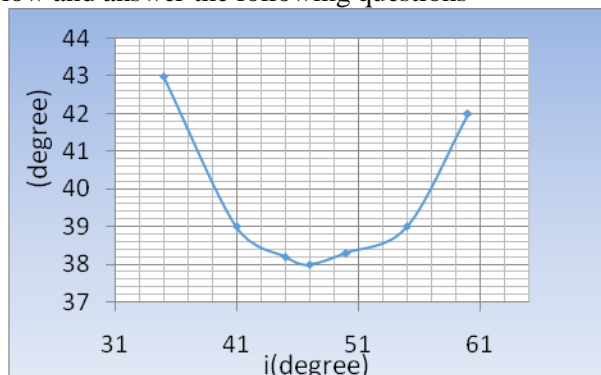


- a) What is the thickness of glass slab used? (Ans: 10cm) 1
- b) What are the values of lateral shift at angle of incidences 10° and 80° ? (Ans: 0.4cm, 8.4 cm) 1
- c) Calculate the value of angle of refraction when angle of incidence is 30° . (Ans: 19.08°) 2
- d) Use the value of angle of refraction obtained in (c) to calculate the refractive index of the glass.

(Ans: 1.53) 1

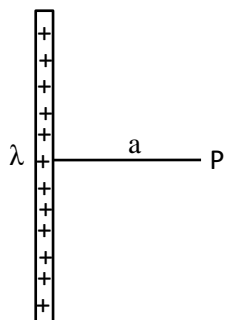
OR

Study the following graph below and answer the following questions



The figure shows i-D curve for some glass prism

- a) What does the graph indicate? 1
- b) List out any two angles of incidences for which the angle of deviation is equal. 1
- c) Find the angle of prism. (Ans: 56°) 1
- d) What is the angle of minimum deviation and at what angle of incidence the deviation is minimum? (Ans: 38° , 47°) 2
17. a) State Gauss's law in electrostatics. What is the physical significance of the term 'permittivity' of medium? 2
- b) The figure shows a long straight conductor uniformly charged with positive charges. If λ is the linear charge density, what is the amount of charges per unit length of the conductor? We are interested to calculate the electric field at a point P at a distance 'a' from the conductor.

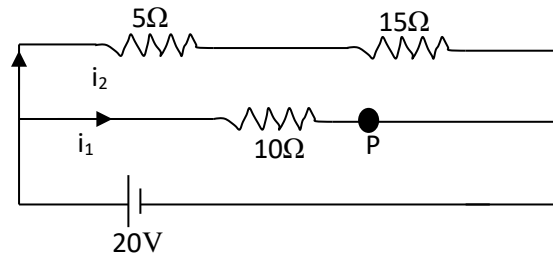


18. a) Define capacitance of a parallel plate capacitor and state one application of it in electric circuit. 2

- b) A parallel plate capacitor consists of the square plates each of side 25 cm, 3.0 mm apart. If a p. d. of 200V is applied, calculate the charge on the plates with
- i) Air, and ans: $3.71 \times 10^{-8} \text{ C}$
- ii) Paper of relative permittivity 2.5, filling the space between them, ($\epsilon_0 = 8.9 \times 10^{-12} \text{ Fm}^{-1}$)
ans: 9.31×10^{-7}

3

19. Consider the given circuit and answer the questions



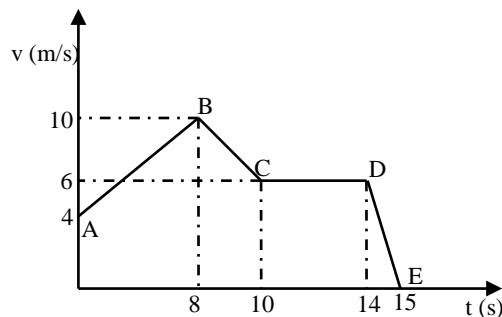
- a) Calculate the currents i_1 and i_2 .
- b) What are p.d. across 5Ω and 10Ω resistors? 1.5
- c) If the connection is broken at point P, what is the value of current through 5Ω resistor and p.d. across 15Ω resistor? 2

Group 'C'

Give long answer to the following questions:

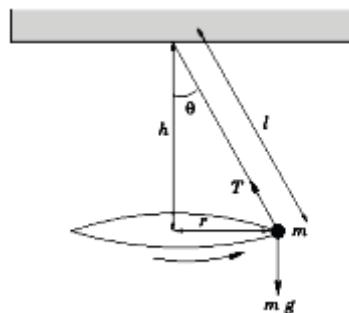
(3×8=24)

20. The adjacent graph shows velocity-time graph for the motion of a body in straight line. Study it and answer the following questions.



- a. State the intervals where the body is (a) accelerating and (b) retarding.
Ans: (0-8s, and 8s-10s, 14s-15s) 1
- b. What is the initial velocity of the body? What is the maximum velocity attained by it during its motion?
Ans: 4m/s, 10m/s 1
- c. What is the total time taken by the body to come at rest from beginning? 1
- d. At which interval the velocity is uniform? **Ans: (10 s to 14s)** 1
- e. Calculate the distance covered by body during its motion in time $t = 8$ sec to $t = 10$ sec. **Ans: 16m** 2
- f. What is the total distance covered by body during entire the motion? [**Hint: find total area under the graph**] 2

21. The given figure is of a conical pendulum.



The circle has a radius of 0.8 m and length of the thread of pendulum is 1m. The object travels around the path with a constant speed.

- (i) Explain why the object is accelerating, even though it is travelling at a constant speed. 2
- (ii) The object has a mass of 2 kg. Calculate the tension in the thread. Also calculate the time period of revolution 3
- (iii) Calculate the angular velocity, translational velocity and the centripetal force. 3

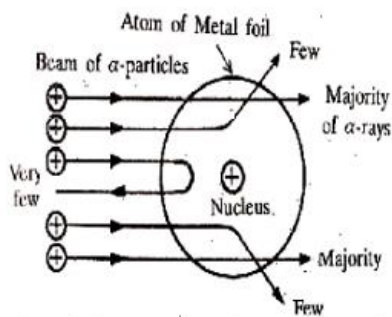
Or

Juno is a NASA orbiter with a mission to survey Jupiter. It is in an elliptical orbit around Jupiter as shown in the figure below.



The gravitational potential at point A in the orbit of Juno is $-1.70 \times 10^9 \text{ J kg}^{-1}$

- (a) State what is meant by a gravitational potential at point A is $-1.70 \times 10^9 \text{ J kg}^{-1}$ 2
 - (b) At point B, Juno is $1.69 \times 10^8 \text{ m}$ from the centre of Jupiter. If the mass of Jupiter is $1.90 \times 10^{27} \text{ kg}$, calculate the gravitational potential at point B. ans: $-7.49 \times 10^8 \text{ J/kg}$ 3
 - (c) The mass of Juno is $1.6 \times 10^3 \text{ kg}$. Determine the change in gravitational potential energy if Juno moves from Point A to Point B. ans: $1.52 \times 10^{12} \text{ J}$ 3
22. Study the given diagram and answer the questions.



- a) Which experiment is represented in the given figure? 1
- b) In this experiment, majority of alpha particles are found to pass undeviated. What conclusion can be drawn from this observation? 1
- c) What is the reason behind the deflection of very few particles by an angle of 180° as shown in the figure? 2
- d) In the figure, r_0 is the distance between point A and center of a nucleus (also called distance of closed approach). Let 'Z' is the atomic number of element used and 'E' is the K.E. of incident alpha particle. The charge of an alpha particle is equal to $2e$ (e = charge of an electron). Show that,

$$r_0 = \frac{1}{4\pi\epsilon_0} \frac{2Ze^2}{E} \quad r_0 = \frac{1}{4\pi\epsilon_0} \frac{2Ze^2}{E}$$
2
- e) Write Rutherford model of an atom. 2

NEB Examination - 2079

Time: 3 hrs

Full marks: 75

Pass marks: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

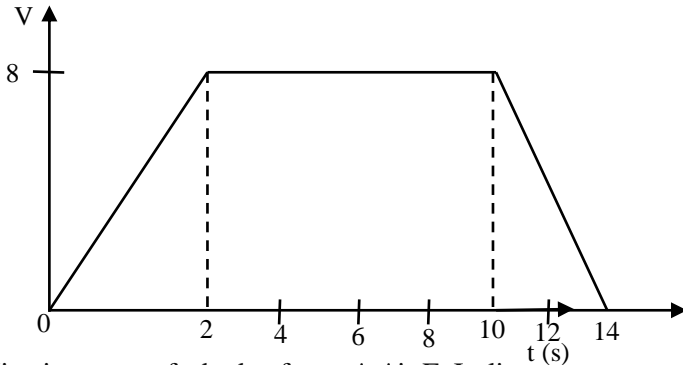
Attempt All Questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

(11×1=11)

- What is the result in significant figures? When 327.6 is added with 15.22?
a. 342.82 b. 342.8 c. 342.820 d. 342
- The v-t graph of a runner is shown in figure. Velocity is in m/sec. The distance travelled by the runner between t = 0 to t = 10 sec. is:
a. 68 m. b. 72 m. c. 80 m. d. 96m.



- Kinetic energy of a body of mass 'm' is E. Its linear momentum will be equal to:
a. 2mE b. $\sqrt{2mE}$ c. $\sqrt{\frac{mE}{2}}$ d. $\frac{2E}{m}$
- If the length of a wire is reduced to half, its load bearing capacity will:
a. decrease to half b. decrease to one fourth c. increase by two d. remain same
- Two particles of equal masses are revolving in circular paths of radii r_1 and r_2 respectively with same speed. What will be the ratio of their forces?
a. $\frac{r_2}{r_1}$ b. $\sqrt{\frac{r_2}{r_1}}$ c. $\left(\frac{r_1}{r_2}\right)^2$ d. $\left(\frac{r_2}{r_1}\right)^2$
- What will be the focal length of spherical mirror when immersed in liquid?
a. increase b. decrease c. remains same d. none of above
- The refractive index of glass is 1.5 and water is 1.33. Then, what is the critical angle for glass water interface?
a. 54.6° b. 48° c. 62.7° d. 56°
- The angular separation for a lens is 0.0178 and deviation for yellow light is 0.5170, then dispersive power is:
a. 0.031 b. 0.033 c. 0.034 d. 0.035
- If in a plano-convex lens radius of curvature of convex surface is 10 cm and the focal length is 30 cm., the refractive index of the material of the lens will be:
a. 1.5 b. 1.66 c. 1.33 d. 3
- The length of a conductor is halved, its specific resistance is:
a. doubled b. halved c. quadrupled d. unchanged
- Quark combination of neutron is:
a. uss b. uud c. udd d. dds

Answers:

1b	2b	3b	4d	5	6.c	7.c	8.c	9.c	10.d	11.c
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Group 'B'

Write short answer to the following questions.

(8×5=40)

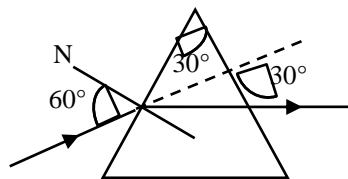
- Write down the equation that defines linear momentum. Is the momentum a vector or a scalar quantity?
 - A trolley of mass 2.0 kg is moving with a velocity 0.6 m. It collides with a tsecond, stationary trolley of mass 4.0kg. They stick together and move off at 0.2 ms^{-1} .
 - Show that momentum is conserved in this collision. 2
 - Explain whether the collision is elastic or inelastic. 2

OR

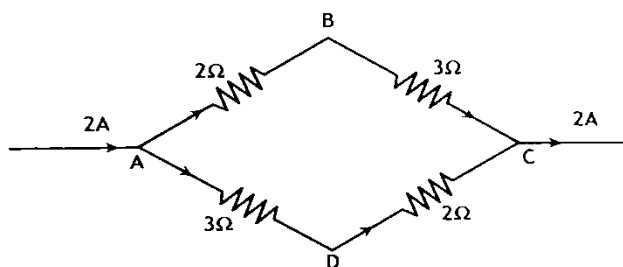
- a. What is meant by moment of couple? 2
- b. Superman throws a 2400N boulder at an adversary. What horizontal force must superman apply to the boulder to give it a horizontal acceleration of 12m/s^2 ? 2
- c. The distance travelled by a moving body is directly proportional to time. Is any external force acting on it? **Ans b: 2938.8N** 1
13. a. Explain why a beaker filled with water at 4°C , overflows if the temperature is decreased or increased? 1
- b. Establish a relation between coefficient of real and apparent expansion of liquid. 2
- c. The density of silver at 0°C is 10310kgm^{-3} and coefficient of linear expansion is $0.000019^\circ\text{C}^{-1}$. Calculate its density at 100°C . 2
14. a. Distinguish between specific heat capacity and specific latent heat of a body. 1
- b. How can water be made to boil without heating it? 1
- c. A metal rod of length 20 cm. and cross sectional area 3.14cm^2 is covered with non-conducting substance. One of its end is maintained at 100°C . While the other end is put in ice at 0°C . It is found that 25 g of ice melts in 5 minutes. Calculate the thermal conductivity of the metal ($L_i = 3.36 \times 10^5\text{Jkg}^{-1}\text{k}^{-1}$). 3
Ans: $178.34\text{Wm}^{-1}\text{K}^{-1}$
15. a. What do you mean by ideal gas? 1
- b. Define absolute zero temperature with support of P - T and V - T graph. 2
- c. A glass vessel contains air at 27°C . To what temperature must it be heated to expel one fourth of the air, the pressure remaining constant. **Ans: 225 K** 2
16. a. Draw the ray diagram showing the formation of real image by a concave lens. 1
- b. A convex lens is immersed in water will its focal length change? Explain. 2
- c. An object is placed at distance 1.5 m from a screen and a convex lens is interposed between them. The magnification produced is 4. What is the focal length of the lens? (**Ans: 0.24m**) 2

OR

- a. Define angle of prism. 1
- b. Mention the factors on which the deviations produced by a prism depend. 1
- c. A ray of light is incident at an angle of 60° on one face of a 30° prism. The emergent ray from the prism makes an angle of 30° with the incident rays as shown in figure. Calculate the refractive index of material of prism. (**Ans: 1.732**) 3



17. a. What do you mean by dielectric strength of a dielectric? 1
- b. Explain the effect of inserting dielectric between the plates of a parallel plate capacitor on its capacitance. 2
- c. The space between the plates of a parallel plate capacitor of capacity 10F having air between plates is filled up with mica ($\epsilon_r = 2$). What will be the new capacity? 2
18. a. The potential difference between two points in an electric field is 5 V. What does it mean? 1
- b. Can two different equipotential surfaces intersect each other? Give reason. 1
- c. What do you mean by an electron-volt (eV)? Explain. 1
- d. An isolated conducting spherical shell of radius 0.10 m, in vacuum, carries a positive charge of $1.0 \times 10^{-7}\text{C}$. Calculate the electric field intensity and potential at a point on the surface of the conductor. 2
19. a. A wire is stretched to double its length. What happens to its resistance and resistivity? 2
- b. An electric bulb is marked with 60 W. What does it mean? 2



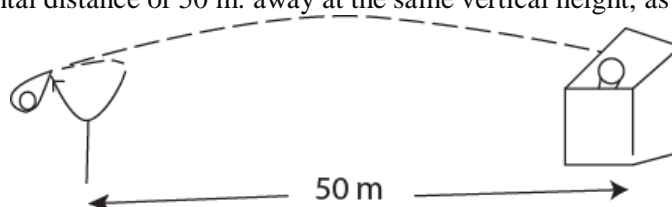
- c. Find the potential difference between the points *B* and *D* in the network given below. (Ans: 1V)

Group 'C'

Give long answer to the following questions:

(3×8=24)

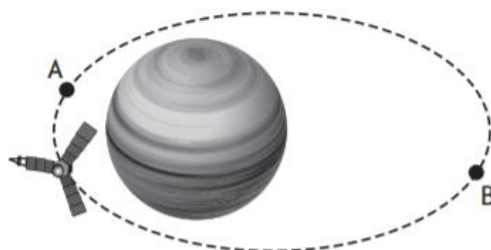
20. A fairground game requires the player to catapult a ball towards a target to some points. The ball is required to reach a target at horizontal distance of 50 m. away at the same vertical height, as shown in figure below.



- a) The time taken by the ball to reach the target is 2.0 seconds. Calculate the angle to the horizontal at which the ball is launched. **Ans 21.4 degree** 2
- b) During another launch, the catapult exerts a force, on the ball, of 9.0 N at 40° to the horizontal at the time of release. Draw a labeled vector diagram to determine the resultant force acting on the ball of weight to 2.0 N at the time of release. **Ans 6.89N** 3
- c) Find the magnitude of resultant force if an angle between 9.0N and 2.0 N is 30° . 3
21. a. The maximum vertical distance through which a fully dressed astronaut can jump on earth is 0.5 m. estimate the maximum vertical distance through which he can jump on the moon which has a mean density two-third that of the earth and radius one-fourth that of the earth. 3
- b. Determine the ratio of time duration of his jump on the moon to that his jump on the earth assuming that the initial velocity on both places are equal. 2
- c) An earth satellite moves in a circular orbit with a speed of 6.2 kms^{-1} . Find the time of one revolution and its centripetal acceleration. 3

OR

Juno is a NASA orbiter with a mission to survey Jupiter. It is in an elliptical orbit around Jupiter as shown in the figure below.



The gravitational potential at point A in the orbit of Juno is $-1.70 \times 10^9 \text{ J kg}^{-1}$.

- a. State what is meant by a gravitational potential at point A is $-1.70 \times 10^9 \text{ J kg}^{-1}$. 2
- b. At point 'B', Juno is $1.69 \times 10^8 \text{ m}$ from the centre of Jupiter. If the mass of Jupiter is $1.90 \times 10^{27} \text{ kg}$. Calculate the gravitational potential at point 'B'. 3
- c. The mass of Juno is $1.6 \times 10^3 \text{ kg}$. Determine the change in gravitational potential energy if Juno moves from point 'A' to point 'B'. 3
23. a. Define binding energy and binding energy per nucleon. 2
- b. Discuss the graph of variation of binding energy per nucleon with mass number. 3

- c. The most common isotope of uranium ${}_{92}^{238}\text{U}^{238}$ has atomic mass 238.050783 u, mass of proton, $m_p=1.007276$ u, mass of neutron, $m_n=1.008665$ u, calculate:
- (i) the mass defect. 1
(ii) the binding energy in MeV. 1
(iii) binding energy per nucleon. 1
- Ans: (i) 1.883699 u, (ii) 1754.665618 mev, (iii) 7.37 mev

NEB Examination - 2080

Time: 3 hrs

Full marks: 75

Pass marks: 27

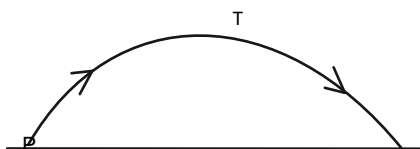
Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

- If the force, length and time are taken as fundamental units, the dimensions of mass are
a. $F^1L^{-1}T^2$ b. $F^0L^0T^2$ c. $F^1L^2T^{-2}$ d. $F^1L^1T^{-2}$
- A force of $(3i+4j)$ Newton acts on a body and displaces it by $(3i + 4j)$ meters. The work done by the force is:
a. 10J b. 12J c. 16J d. 25J
- In the absence of air resistance, a stone is thrown from P and follows a parabolic path in which the highest point reached is T. The vertical component of acceleration of the stone is:



- a. zero at t b. great at t c. greatest at p d. the same at p as at t
- A rubber ball is taken to 50 m. deep lake and its volume changes by 0.1%. The bulk modulus of rubber is approximately.
a. $5 \times 10^6 \text{N/m}^2$ b. $5 \times 10^7 \text{N/m}^2$ c. $5 \times 10^8 \text{N/m}^2$ d. $5 \times 10^9 \text{N/m}^2$
- A train is climbing an inclination of 1 in 100. If the mass of the train is 10000kg and friction is neglected, what power is needed to climb the inclination at uniform velocity of 20m/s?



- a. 20 MW b. 20KW c. 2.2 GW d. 7.5 GW
- A motorbike moving at a speed of 30m/s overtakes a car moving at 25m/s. looking at the car from the rear plane mirror placed in the bike, what is the receding velocity of the image of the car?
a. zero b. 5 m/s c. 10 m/s d. 12m/s
- The refractive index of glass is 1.5 and water is 1.33. Then, what is the critical angle for glass water interface?
a. 54.6° b. 48° c. 62.7° d. 56°
- A deviation of 5° is observed from a thin prism. The refractive index of prism material is 1.5. The angle of prism is
a. 5° b. 10° c. 7.5° d. 3.3°
- The focal length of a concave lens is 50 cm. The power of the lens is
a. -2D b. +0.5D c. -0.5D d. +2D
- Electric current is a
a. scalar quantity b. vector quantity c. tensor d. number only

11. The radius R of a nucleus changes with the nucleon number A of nucleus as:
 a. $R \propto A^{2/3}$ b. $R \propto A^{1/3}$ c. $R \propto A^0$ d. $R \propto A$

Answers:

1a	2d	3d	4d	5b	6b	7.c	8.b	9.a	10.a	11b
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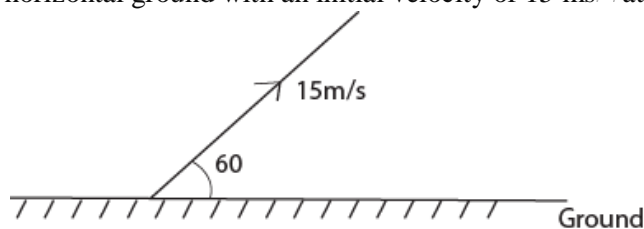
Group 'B'

[8× 5=40]

12. a. Explain work done by a constant force and variable force. 2
 b. What is work done in holding a 15 kg suitcase while waiting for a bus for 15 minutes? 1
 c. A body of mass 1.0 kg initially at rest is moved by a horizontal force of 0.5 N on a smooth frictionless table. Calculate the work done by the force in 10 sec and show that this is equal to the change in kinetic energy of the body. 2

OR

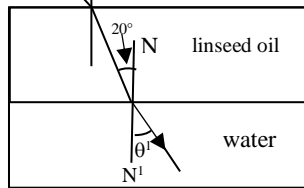
A ball is thrown from horizontal ground with an initial velocity of 15 ms^{-1} at an angle 60° to the horizontal.



- a. Calculate, for this ball, the initial values of
 i) Vertical component of velocity 1
 ii) Horizontal component of velocity 1
 b. Assuming air resistance can be neglected, use your answers in (a)
 i. To determine the maximum height to which the ball rises 1
 ii. Time of flight 1
 iii. Horizontal range **Ans :7.5m/s,12.9m/s** 1
13. a. What is meant by specific latent heat of fusion of ice = 0.336 MJ/kg? 1
 b. A calorimeter of 50g contains 100g water and 50g of ice. Calculate the heat required to melt all the ice in the calorimeter and to make the temperature of system reach 89°C . (Specific latent heat of fusion of ice = 0.336 MJ/kg, specific heat capacity of material of calorimeter = $0.094 \text{ cal g}^{-1} \text{ }^\circ\text{C}^{-1}$) 3
 Ans: 74626.86 J
 c. Explain why ice feels colder than water at 0°C . 1
14. a. What is meant by thermal conductivity of conductor? 1
 b. A slab of stone of area 0.36m^2 and thickness 10 cm is exposed on the lower surface to steam at 100°C . A block of ice at 0°C rests on the surface of the slab. In one hour, 4.8 kg of ice is melted. Calculate the thermal conductivity of stone. (Latent heat of fusion of ice = $3.36 \times 10^5 \text{ Jkg}^{-1}$). 3
 Ans: $12.44 \text{ Wm}^{-1}\text{K}^{-1}$
 c. Why thermal conductivity is larger for metal than that of other solid like wooden block? 1
15. a. What is the temperature when all molecular motion ceases? 1
 b. Relate Pressure coefficient and volume coefficient of a gas using Charles's law and Boyle's law. 2
 Ans: 1.785 kgm^{-3}
 c. At pressure of $9.52 \times 10^4 \text{ N/m}^2$, the root mean square speed of the molecules of a gas is 400ms^{-1} . What is its density? 2
16. a. Define total internal reflection. 1
 b. Can total internal reflection be achieved if the object originates in rarer medium? Explain with a diagram to justify your answer. 2
 c. The light beam shown in figure makes an angle of 20.0° with the normal line NN^1 in the linseed oil. Determine the angles θ and θ^1 . (The refractive index of linseed oil is 1.48 and the refractive index of water

is 1.33].
2

[Ans: $\theta = 30.4$, $\theta^1 = 22.3$]



OR

- a. Does the focal length of a curved mirror depend on medium in which it is placed? 1
- b. Can virtual image be produced with the help of concave mirror? When? Explain with ray diagram. 2
- c. An object 6 cm from a spherical mirror produces an image 18 cm behind the mirror. Assuming the object is real, find the focal length of the mirror and determine whether the mirror is convex or concave. (Ans: **9 cm, concave**) 2
17. a. State Gauss theorem of electrostatics. 1
- b. Use it to find the electric field intensity at the surface of charged sphere. 3
- c. What would be the electric field inside the sphere? 1
18. a. What do you mean by dielectric strength of a dielectric? 1
- b. Explain the effect of inserting dielectric between the plates of a parallel plate capacitor on its capacitance. 2
- c. The space between the plates of a parallel plate capacitor of capacity $10 \mu\text{F}$ having air between plates is filled up with mica ($\epsilon_r = 2$). What will be the new capacity? 2
19. a. Define current density. 1
- b. Derive $J = nev$ where symbols carry their usual meaning. 2
- c. A copper wire of diameter of 1.02 mm carries a constant current of 1.67 A, calculate the current density. (Ans: **$2.04 \times 10^6 \text{ A/m}^2$**) 2

Group 'C'

[3×8=24]

20. a. State the principle of conservation of linear momentum. 1
- b. Explain and derive this principle using Newton's second and third law of motion. 3
- c. A gun weighing 10 kg fires a bullet of 50 gm. with a velocity of 500 ms^{-1} i) With what velocity does the gun recoil. ii) What is the resultant momentum of the gun and the bullet before and after firing? 2
- d. Can two unequal coplanar forces acting together produce condition of equilibrium? 2
- Ans c 2.5 m/s, zero each.2**
21. A preliminary stage of spacecraft Apollo 11's journey to the moon was to place it in an earth parking orbit. The orbit was circular, maintaining almost a constant distance of 189 km from the earth's surface.



Assuming the gravitational field strength in this orbit is 9.4 N/Kg , calculate:

- a. Speed of the aircraft in this orbit. ans: 2440.6 m/s 2
- b. Time to complete one orbit. (Radius of the earth = 6370 km) ans: 4.5 hrs 2
- c. Work done during its orbital motion around the earth. ans: 0 J 1

- d. Will the astronauts inside the spacecraft experience the weightlessness? Explain. 2
 e. If the spacecraft somehow stops its orbital motion, what will happen to it? 1

OR

- a. Explain the term breaking stress. Why elephant has thicker legs as compared to human beings? 2
 b. What force must be applied to a steel wire 6 m long and diameter 1.6 mm to produce an extension of 1 mm. ($Y_s = 2.0 \times 10^{11} \text{ N/m}^2$) **Ans:67 N** 2
 c. Derive an expression for energy stored in a stretched wire. 3
 d. Calculate energy stored in the stretched wire in question (b) 1
 22. a. Define binding energy and binding energy per nucleon. 2
 b. The energy liberated in the fission of single atom of uranium 235 is $3.2 \times 10^{-11} \text{ J}$. Calculate the power production corresponding to the fission of 1 gm of uranium per day. {Assume Avogadro number = $6.0 \times 10^{23} \text{ mol}^{-1}$ } 3
 Ans: $9.46 \times 10^5 \text{ Watt}$
 c. What is the difference between P-type and N-type semiconductors? 2
 d. State Hubble's law. 1

NEB Examination - 2081

Time: 3 hrs

Full marks: 75

Pass marks: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

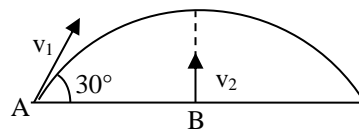
Attempt all questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

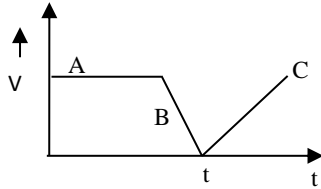
1. If $x = at + bt^2$, where x is distance travelled by the body in kilometer while 't' is the time in seconds, then the units of 'b' is
 a. Kms^{-1} b. Kms c. Kms^{-2} d. Kms^2
 2. A body is projected with velocity v_1 from the point A as shown in the fig. At the same time, another body is projected vertically upwards from B with velocity v_2 . The point B lies vertically below the highest point. For both the bodies to collide, $\frac{v_2}{v_1}$ should be:



- a. 2 b. 0.5 c. $\frac{\sqrt{3}}{2}$ d. 1
 3. A power station has an efficiency of 40% and generates 1000 MW of electric power. What is the input power and the wasted power?

	Input power/MW	Wasted power/ MW
A	1000	400
B	1000	600
C	1400	400
D	2500	1500

4. The wire is stretched to double its length within the elastic limit. The value of Young's modulus is
 a. increased. b. decreased. c. constant. d. doubled.
 5. The velocity time - graph of a body is shown in the below figure. It implies that at point B.



- a. the force is zero.
 - b. there is a force towards motion.
 - c. there is a force which opposes motion.
 - d. there is only gravitational force.
6. A 5cm tall object is placed at 20 cm far from a concave mirror of focal length 15 cm. What is the nature of image?
- a. Virtual, erect and magnified
 - b. Virtual, erect and diminished
 - c. Real inverted and diminished
 - d. Real, inverted and magnified.
7. The phenomenon used in optical fibers for transmission of light energy is
- a. total internal reflection
 - b. scattering
 - c. diffraction
 - d. refraction.
8. During the minimum deviation produced by the prism,
- a. the angle of incidence is equal to the angle of emergence.
 - b. the angle of refraction at first refracting face is equal to angle of incidence at second face.
 - c. refracted ray is parallel to the base in equilateral prism.
 - d. all of the above.
9. The two thin lenses of focal length +60 cm and - 20 cm are placed in contact the focal length of combination is
- a. + 5 cm
 - b. - 15 cm
 - c. + 30 cm
 - d.- 30 cm
10. A wire of resistor R is stretched to n times of original length. The resistance of wire will become
- a. nR
 - b. n^2R
 - c. n^2r^2
 - d. $(n - 1)^2R$
11. Quark combination of neutron is
- a. uss
 - b. uud
 - c. udd
 - d. dds

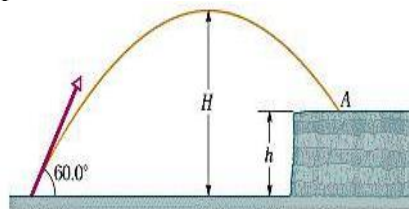
Answers:

1c	2b	3d	4c	5c	6.d	7.a	8.d	9.d	10.b	11.c
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Group 'B'

[8× 5=40]

13. In the figure given below, a stone is projected with velocity 42m/s at the cliff of height 'h' with an angle 60° above the horizontal. The stone strikes at A, 5.60s after launching. Find, . . . (Ans:51.8m,27.3m/s,67.5m)
- a. Height 'h' of the cliff 2
 - b. Speed of the stone just before impact at A and 2



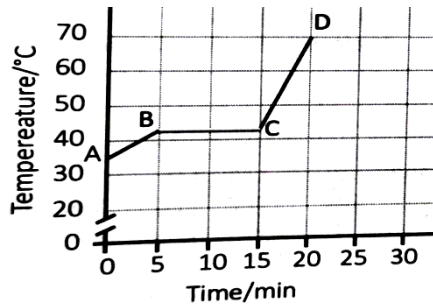
- c. Maximum height 'H' reached above the ground. (take $g = 9.8 \text{ m/s}^2$) 1

OR

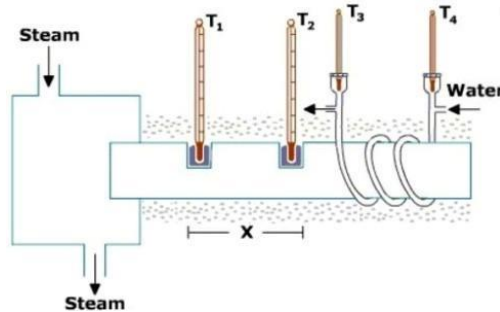
- a. Define stress and strain. 1
 - b. Show that elastic potential energy stored per unit volume of the wire is stress \times strain. 3
 - c. Water is more elastic than air. Why? 1
14. a. Define coefficient of linear expansion. 1
- b. Does the coefficient of linear expansion depend upon the original length? Justify. 2
 - c. An iron rod of length 100m at 10°C is used to measure the distance of 2 km on a day when temperature is 40°C . Calculate the error in the measurement. (Linear expansivity of iron = $12 \times 10^{-6} \text{ }^\circ\text{C}^{-1}$) 2

Ans: 0.48m

14. a. Explain what is meant by the specific latent heat of fusion of a substance. 1
 b. A block of paraffin wax was heated gently, at a steady rate. Heating was continued after the wax had completely melted. The graph of figure shows how the material's temperature varied during the experiment.



- iv. For each section of the graph (AB, BC and CD), describe the state of the material. 1
 v. For each section, explain whether the material's internal energy was increasing, decreasing or remaining constant. 1
 vi. Consider the two sloping sections of the graph. State whether the material's specific heat capacity is greater when it is a solid or when it is a liquid. Justify your answer. 2
15. a. The apparatus shown in adjoining figure is Searle's apparatus. At steady state, when the thermometers show constant readings, the rate of heat flow through any cross-section of the rod is equal to rate of heat absorbed by water. Derive the expression for the thermal conductivity of the rod used. 3



- b. Estimate the rate of heat loss through a glass window of area 2 m^2 and thickness 5 mm ; when the temperature of the room is 27°C and that of air outside is 5°C . (Thermal conductivity of glass = $1.2 \text{ W m}^{-1} \text{ K}^{-1}$) 2
 Ans: $10560 \text{ W m}^{-1} \text{ K}^{-1}$
16. A dentist uses a curved mirror to view teeth on the upper side of mouth. Suppose he/she wants an erect image with a magnification 2.00 when the mirror is 1.25 cm from the tooth.
 d) What kind of mirror (concave or convex) is needed? Use ray diagram to decide, without performing any calculations. 2
 e) What must be the focal length and radius of curvature of the mirror? (Ans: $f = 2.5 \text{ cm}$, $R = 5 \text{ cm}$) 2
 f) Draw a ray diagram to check your answer in (b). 1

OR

- a. Why do the sunglasses, having curved surfaces do not have any power? 1
 b. Derive an expression for combined power of two thin lenses placed in contact. 2



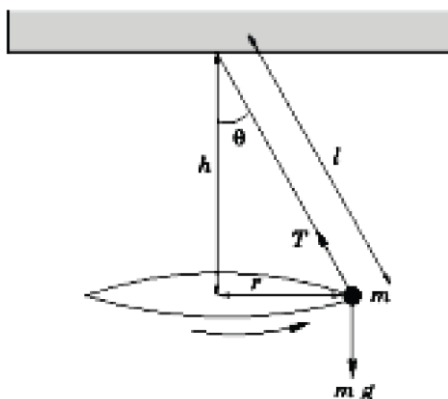
plano-concave

- c. The curved surface of plano-concave lens has 10 cm radius of curvature and the refractive index of the material is 1.6. Calculate the focal length and hence the power of lens. (Ans: 50/3 cm, 6 D) 2
17. a. State Gauss theorem of electrostatics. 1
 b. Use it to find the electric field intensity at the surface of charged sphere. 3
 c. What would be the electric field inside the sphere? 1
18. a. Define capacitance of a capacitor. 1
 b. Deduce an expression for the capacitance of a parallel plate capacitor. 3
 c. Assuming earth to be an isolated conducting sphere of radius 6400 km. What is the capacitance of the earth? 1
19. a. What do you mean by power of a heater 4 KW? 1
 b. Calculate the resistance of above mentioned heater when it is connected to 200V source.(Ans: 10 Ω) 2
 c. What must be done in order to increase heat to the heater? Explain. 2

Group 'C'

[3×8=24]

20. a. State and prove the principle of conservation of energy. 3
 b. Write the difference between the kinetic energy and the momentum of an object? 2
 c. A vehicle of mass 15 quintal climbs up a hill 20 m high. It then moves on a level road with speed of 30 ms⁻¹. Calculate the potential energy gained by it and its total mechanical energy while running on top of the hill. **Ans 294000J, 969000J** 3
21. The given figure is of a conical pendulum.



The circle has a radius of 0.8 m and length of the thread of pendulum is 1m. The object travels around the path with a constant speed.

- a. Explain why the object is accelerating, even though it is travelling at a constant speed. 2
 b. The object has a mass of 2 kg. Calculate the tension in the thread. Also calculate the time period of revolution. 3
 c. Calculate the angular velocity, translational velocity and the centripetal force. 3

OR

- a. What is orbital velocity? 1
 b. Derive formula for orbital velocity and time period of a satellite. 3
 c. A man can jump 1.5 m. on earth. Calculate the approximate height he might be able to jump on a planet whose density is one quarter of the earth and whose radius is one third that of the earth. 4
23. a. What are meant by mass defect and binding energy of nucleus? 2
 b. Given the nuclear reaction, ${}_{92}\text{U}^{238} \longrightarrow {}_{90}\text{Th}^{234} + {}_2\text{He}^4 + \text{Q}$
 Calculate the Q-value of the reaction. 2
 (The mass of ${}_{92}\text{U}^{238} = 238.1249\text{u}$, ${}_{90}\text{Th}^{234} = 234.1165\text{u}$,
 ${}_2\text{He}^4 = 4.0039\text{u}$ and $1\text{u} = 931\text{MeV}$) **Ans: 4.18 mev**
- c. When a particle and its antiparticle are annihilated then energy released is E. What mass of each particle? 2
 d. Differentiate between nuclear fission and fusion. 2

NEB Examination - 2082

Time: 3 hrs

Full marks: 75

Pass marks: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

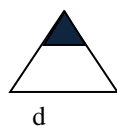
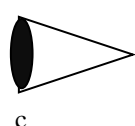
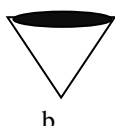
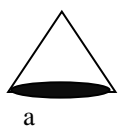
Attempt all questions.

Group 'A'

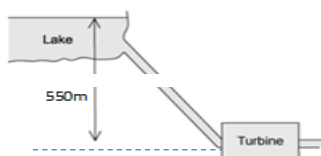
Rewrite the correct option of each question in your answer sheet.

[11×1=11]

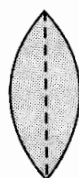
2. The mass of a box is 2.3 kg. Two marbles of masses 2.15 g and 12.39 g are added to it. The total mass of the box to the correct number of significant figures is:
 a. 2.340 kg b. 2.3145 kg c. 2.3 kg d. 2.31 kg
2. Which one form is most stable form for the coin of same mass if dark portion contains most of the mass of cone?



3. A body is moving with a constant speed in a straight line path. A force is not required to
 a. increase its speed b. decrease the momentum
 c. change the direction d. keep it moving with uniform velocity
4. At Kulekhani-I Hydro-power station, water flows from Indra Sarowar into the turbines that are a vertical distance of 550 m below the lake, as shown in the diagram. Generally, 780 000kg of water flows into the turbines every minute. The turbines have the efficiency of 85%. What is the output power of the turbines?



- a. 71 MW b. 60MW c. 4.2 GW d. 3.6 GW
5. A rubber ball is taken to 50 m. deep lake and its volume changes by 0.1%. The bulk modulus of rubber is approximately.
 a. $5 \times 10^6 \text{ N/m}^2$ b. $5 \times 10^7 \text{ N/m}^2$ c. $5 \times 10^8 \text{ N/m}^2$ d. $5 \times 10^9 \text{ N/m}^2$
6. A concave mirror of focal length f is immersed in water $\left(\mu_w = \frac{4}{3} \right)$. The focal length of mirror inside water is
 a. more than f b. less than f c. f d. $\frac{4}{3} f$
7. A small angle prism deviates a narrow beam of light by 1.3° . The refractive index is 1.62 and the angle of prism in degree is;
 a. 1.7 b. 1.8 c. 1.9 d. 2.0
8. A convex lens has focal length f . It is cut into two parts along the dotted line as shown in figure the focal length of each part will be:



- a. $\frac{f}{2}$ b. f c. $\frac{3f}{2}$ d. $2f$
9. Which colour of light deviates maximum in the dispersion of white light by prism?

- a. violet b. blue c. green d. red
10. The length of a conductor is halved, its specific resistance is:
 a. doubled b. halved c. quadrupled d. unchanged
11. An electron is a
 a. meson b. baryon c. hadron d. lepton

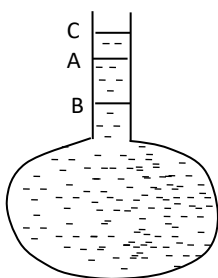
Group 'B'

[8× 5=40]

12. a. State and prove the law of conservation of energy 3
 b. Find the power of engine that can fire water jet of density 1000 kg/m^3 at the speed of 30 m/s upward from the pipe of radius 1 cm? 2

OR

- a. Which one is more elastic, steel or rubber? Explain 2
 b. A uniform steel wire of density 7800 kg/m^3 and weight 16 g is 250 cm long. It lengthens by 1.2 mm when stretched by force of 80 N. calculate Young's modulus for steel and energy stored in the wire? 3
13. a. In the beginning of expansion of water in vessel, the level of water is at A, when the vessel is heated, the level falls to B. Further supply of heat raises the level of water to C. Then

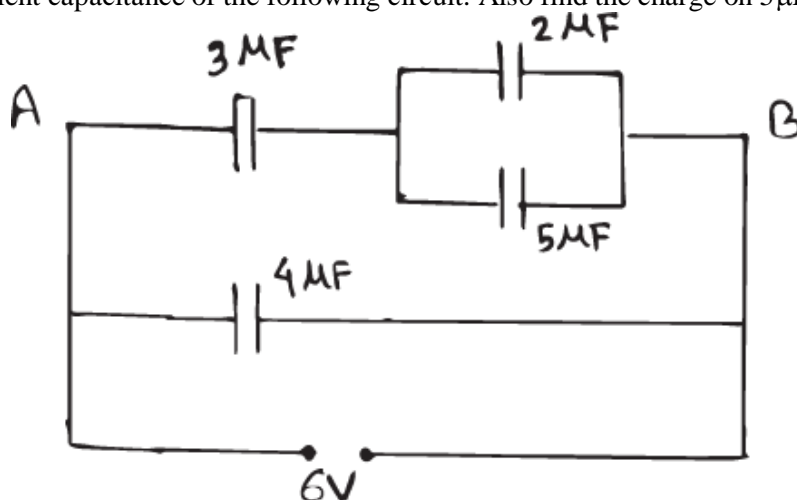


- i) Relate the change of these levels in terms of real and apparent expansion of water.
 ii) Which must have the greater cubical expansivity, water or material of vessel why?
 iii) Explain why level of waterfalls initially? 1
- b. A steel girder is 50 m long and has cross sectional area 250 cm^2 . What is the force exerted by the girder when heated from 5°C to 25°C ? (α for steel = $11 \times 10^{-6} \text{ k}^{-1}$. Young's modulus for steel = $2 \times 10^{11} \text{ Pa}$. 2
14. a. Define thermal conductivity. 1
 b. How will you find coefficient of thermal conduction of a good conductor by Searle's method? 3
 c. Estimate the power loss through unit area from a perfectly black body at 327°C to the surrounding environment at 27°C ?
 $[\sigma = 5.67 \times 10^{-8} \text{ Wm}^{-2}\text{k}^{-4}]$ 1
15. a. What is the physical significance of Universal gas constant? Write down its value. 1+1
 b. A cylinder of gas has a mass of 10.0 kg and a pressure of 8.0 atmospheres at 27°C . When some gas is used in a cold room at -3°C , the gas remaining in the cylinder at this temperature has a pressure of 6.4 atmospheres. Calculate the mass of gas used. 3
16. a. Derive lens Maker's formula.
 b. An equiconvex lens has a power of 4 diopters What will be the radius of curvatures of each surface if the lens is made of glass of refractive index 1.5?

OR

- a. Draw the I-D curve for the prism. 1
 b. State the condition for the minimum deviation produced by the prism. 1
 c. Prove the relation $\mu = \frac{\sin\left(\frac{\delta_m + A}{2}\right)}{\sin\left(\frac{A}{2}\right)}$ in a prism. 3
17. a. state Gauss law. 1

- b. Using Gauss law, find the electric field inside and outside the charged sphere 3
- c. Equipotential surfaces are perpendicular to field lines, why? 1
18. a. Derive an expression for combination of capacitors in parallel. 2
- b. Find the equivalent capacitance of the following circuit. Also find the charge on $5\mu\text{F}$ capacitor. 3



19. a. Define drift velocity of electrons. 1
- b. Establish a relation between drift velocity of electrons and current density in a conductor. 2
- c. If three resistors 4Ω , 6Ω and 12Ω are connected in parallel, find their equivalent resistance. 2

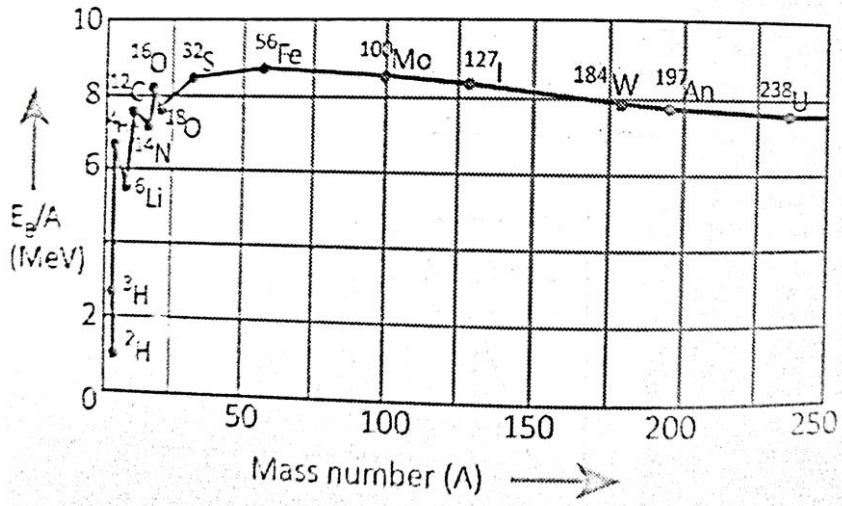
Group 'C'

[3×8=24]

20. a. Define projectile. 1
- b. Derive the equation for (i) maximum height (ii) time of flight (iii) horizontal range (iv) resultant velocity. 4
- c. An airplane travels 280 m. down the runway before taking off. If it starts from rest, moves with constant acceleration and become airborne in 8 seconds, what is its speed when it takes off? 2
- d. Can a body moving with constant acceleration reverse its direction? Explain. 1
21. a. Prove $F = \frac{mv^2}{r}$, where symbols have usual meaning. 3
- b. Explain why a cyclist inclines himself to the vertical while moving round a circular path. 2
- c. At what angle should a circular road be banked so that a car running at 50 km/hr is safe to go round the circular turn of 200 m radius? 3

OR

- a. Derive an expression for the variations of 'g' with altitude. 3
- b. Where the value of 'g' is maximum (i) on surface of earth (ii) inside earth (iii) above the earth surface. 1
- c. If the radius of the earth becomes two times its present value and its mass remains unchanged then how will the weight of an object on the surface of the earth be affected? 2
- d. How does the GPS system work? 2
22. a. Define binding energy and mass defect. 2
- b. The binding energy per nucleon as a function of mass number curve is shown in the figure below. (i) From the curve, which nuclei are prone to fission reaction and fusion reaction, and why? (ii) How can several protons exist in a microscopic space inside the nucleus? (iii) Write any two significances of the given curve. 3



d. Describe N- type extrinsic semiconductor.

3

First Term Examination – I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Group 'A'

Rewrite the correct option in your answer sheet.

[11×1=11]

- The formula for potassium chromate is
a) K_2CrO_4 b) $KCrO_4$ c) K_2CrO_7 d) $KCrO_7$
- What is the correct match of the elements and their atomic weights?
A. Ar i. 63.5
B. Cu ii. 40
C. Zn iii. 65.5
D. K iv. 39
a) A - i, B - ii, C-iv, D - iii c) D-i, C-iii, B-ii, A-iv
b) A-ii, B - i, C-iii, D - iv d) A-iv, B-iii, C - ii, D - i
- 7.5 g of unknown gas occupies 5.6 liter of volume at STP. The gas may be
a) NO b) N_2O c) CO d) CO_2
- Mass of 1 atom of hydrogen is
a) 1.008 g b) 1.008g c) $1.008/N_A$ g d) 2.016 g
- Which of the following is empirical formula?
a) C_6H_6 b) $C_2H_4O_2$ c) $C_6H_{12}O_6$ d) $C_6H_5O_6$
- When the azimuthal quantum number, $l = 1$, the shape of the orbital will be,
a) Circular b) Spherical c) Dumb-bell d) Elliptical
- The concept of quantization of energy is given by
a) Sommerfield b) Dalton c) Heisenberg d) Bohr
- Real gasses will approach the behavior of ideal gas at
a) high T, low P b) high T, high P c) low T, low P d) low T, high P
- The gas that combines with hemoglobin to damage its oxygen-carrying capacity is
a) O_2 b) CO c) N_2 d) CO_2
- Which of the following is alicyclic compound?
a) Pentane b) Benzene c) Cyclopentane d) Aniline
- The isomers of a substance must have
a) same chemical properties b) same functional group
b) same molecular formula d) same structural formula.

Group 'B'

[8×5 = 40]

- $ZnSO_4 \cdot 7H_2O$ is also called white vitriol.
a) How many waters of crystallization are present in the formula? [1]
b) Write cation and anion of the formula. [2]
c) Define valency. [1]
d) Mention the valency of Zinc and Sulphate in this formula. [1]
- The law of reciprocal proportion is given by Jeremias, Benjamin Richter in 1792.
a) State the law of reciprocal proportion. [1]
b) Why this law also known as law of equivalent proportion? [1]
c) Phosphine contains 91.1% of P and 8.9% H; water contains 88.8% of O and 11.2% H; Phosphorus tetroxide contains 56.4% of P and 43.6% of O. show that these data illustrate law of reciprocal proportions. [3]
- Quantum numbers are those parameters that are used to describe each electron in an atom completely.
a) Name the different quantum numbers? Name them. [1]
b) An electron of an atom possesses the quantum numbers $n = 2$, $l = 0$ and $m = 0$. What do they mean? [1]

- c) Which quantum number specifies the energy of an electron in an atom? [1]
 d) What information is provided by the magnetic quantum number? [1]
 e) What are the values of spin quantum number of two electrons present in a orbital? [1]
15. The Nobel Laurates in physics of 1992, Neil Bohr's explain the Stability and spectra of atom.
 a) What are atomic spectra? [1]
 b) Define ground and excited state. [1]
 c) Mention any three-postulate given by Bohr's. [3]
16. Matters are physically classified into solid, liquid and gaseous state.
 a) Gases are highly compressible than solid .why? [1]
 b) Gases do not maintain volume and shape .why? [1]
 c) A hydrocarbon C_AH_B has mass ratio of Carbon and Hydrogen is 10.5:1. If the molar mass of hydrocarbon is 92. Find the value of A and B. [3]
17. Gases having equal molecular weight also have the same rate of diffusion, for example; CO_2 & N_2O diffuse at the same rate.
 a) What is mean by diffusion of gas? [1]
 b) State Graham law of diffusion. [1]
 c) Mention application of Graham law of diffusion. [1]
 d) A saturated hydrocarbon having molecular formula C_nH_{2n+2} diffuses through porous membrane twice as fast as SO_2 . Calculate the molecular mass of hydrocarbon and relative rate of diffusion. [2]
18. When Carbon or hydrocarbon are burnt in a limited supply of air, a toxic gas Carbon monoxide is obtained.
 a) How Carbon monoxide is toxic to human health. [2]
 b) Why CO is used as reducing agent in metallurgy but not CO_2 . [1]
 c) Convert Carbon monoxide into Carbon dioxide and vice-versa. [2]
19. The systematic arrangement of compounds containing same function group gives homologous series.
 a) Define functional group. [1]
 b) Write the third member of the homologous series of carboxylic acid with IUPAC name. [2]
 c) Write few important characteristics of homologous series. [2]

Group 'C'

[3×8=24]

20. Hetero elements are usually detected by Lassaigne's test which was developed by French Chemist J.L. Lassaignes.
 a) What are foreign elements? [1]
 b) What is meant by Lassaigne's test? [1]
 c) Why an organic compound is fused with sodium metal for preparing Lassaigne's extract? [2]
 d) Sodium extract is slightly alkaline, why? [2]
 e) Write the reaction for the detection of Nitrogen. [2]
21. Avogadro's hypothesis was developed after the concept given by Swedish Chemist J.J. Berzelius.
 a) State Berzelius hypothesis. [1]
 b) Why the development of Avogadro's hypothesis necessary? Illustrate with example. [2]
 c) Show that molar volume of any gas is equal to 22.4 L at NTP. [2]
 d) Calculate the molar mass of 44 mg of substance that contain 6.023×10^{20} molecules. [2]
 e) Calculate the density of Sulphur dioxide and Carbon dioxide. [1]
22. The concept of atom was given by the chemist John Dalton in 1808.
 a) What are atoms? [1]
 b) What are subatomic particles? Name the subatomic particle present in an atom. [2]
 c) Mention the postulates of Dalton's Atomic theory. [3]
 d) Why atomic mass of some element is in fractional? Provide a suitable example of it. [2]

First Term Examination – II**Class: XI****Time: 3 hrs.****F. M.: 75****P.M.: 30****Set: B****Group 'A'****Rewrite the correct option in your answer sheet.****[11×1=11]**

- The formula of Aluminium Nitrate is
a) AlNO_3 b) $\text{Al}(\text{NO})_3$ c) $\text{Al}_2(\text{NO}_3)_3$ d) $\text{Al}(\text{NO}_3)_3$
- Percentage of Nitrogen in urea is about
a) 46% b) 64% c) 28% d) 86%
- The masses of 1 gram atom of each of Na and P are respectively
a) 23 g and 32 gram b) 32 g and 23g c) 1 g and 1g d) 23 g and 31 g
- The number of water molecules presents in a drop of water (volume = 0.0018 ml) at room temperature is:
a) 6.023×10^{19} b) 1.084×10^{18} c) 4.84×10^{17} d) 6.023×10^{23}
- All particles residing inside the nucleus of an atom is termed as
a) neutrons b) protons c) nucleons d) electrons
- The splitting of line into group under the effect of magnetic field is
a) Stark effect b) Zeeman effect c) Crompton effect d) pressure effect
- The compressibility factor for an Ideal gas is
a) 1.5 b) 1 c) 0.5 d) ∞
- Diamond and Graphite both have
a) Delocalized electron c) same bond length
b) same hybridization d) C-C covalent bond
- The graph plot obtained between P and V at constant temperature is known as
a) Isobar b) Isochor c) Adiabatic d) Isotherm
- The class name of alkoxyalkane is
a) Alcohol b) Aldehyde c) Ether d) Ester
- First man made organic compound from inorganic source is
a) formic acid b) urea c) methane d) acetic acid

Group 'B'**[8×5=40]**

- Chemistry is called central of science and contributes significantly to the advancement of human civilization.
a) How will you define Chemistry? [1]
b) Define and classify matter. [1]
c) Show your familiarity with the scope and importance of chemistry in our daily life. [3]
- Dalton states a law that different masses of element that combine with a constant weight of other bear a simple whole number ratio. This law is obeyed by oxides of Nitrogen.
a) Name this law of stoichiometry given by Dalton. [1]
b) Carbon combines with oxygen to give CO and CO_2 . which law illustrate the data? [2]
c) A metal form two chloride containing 65.6 % and 55.9% chloride respectively. Show that these data illustrate law of multiple proportional. [2]
- Rutherford in 1911 purposed a nuclear model to an atom called Rutherford nuclear model of an atom. Based on conclusion drawn from alpha particle scattering experiment.
a) Draw and label the diagram for the Rutherford's alpha ray scattering experiment. [2]
b) What were the observations made in the experiment? [1]
c) How did he conclude the nuclear model of an atom? [1]
d) What is the limitation of the model? [1]
- A Nobel Prize winner in physics in 1932 W. Heisenberg is famous for his principle Heisenberg uncertainty principle
a) State Heisenberg uncertainty principle. [2]
b) Why Heisenberg uncertainty principle is applicable for microscopic particle? [1]

- c) Why this principle is against Bohr's fixed orbit? [1]
 d) What are stationary state in Bohr's model? [1]
16. Real gas shows deviation from ideal behavior at high pressure and low temperature. [2]
 a) Differentiate ideal gas from real gas. [2]
 b) Mention the cause of deviation of real gas from ideal behavior. [1]
 c) What is ideal gas equation? [1]
17. The law related to partial pressure is given by John Dalton in 1801. [1]
 a) What is partial pressure of gas? [1]
 b) State Dalton's law of partial pressure [1]
 c) When 2 mole of gas A and 3 mole of gas B are kept in a vessel having capacity 5 litre at 27°C. Calculate the partial pressure of each gas and the total pressure of mixture of gas. [2]
18. Moissan in 1893 prepares a first artificial diamond by heating pure sugar charcoal and iron in a graphite crucible. [1]
 a) Why diamond is denser than graphite. [2]
 b) Graphite is good conductor while diamond is insulator. Why? [2]
 c) What the application of diamond and graphite? [2]
19. Organic compounds are characterized by forming the typical homologous series. [1]
 a) What are organic compounds? [2]
 b) Define the term homologous series and homologue. [2]
 c) Write the first member of aldehyde and second member of ketone with their IUPAC name. [2]

Group 'C'

[3×8=24]

20. The presence of sulphur in organic compounds can be detected by different method using sodium extract. [1]
 a) Sulphur is hetero elements. Why it is called so? [1]
 b) Give one example of organic compound that contain sulphur as hetero element. [2]
 c) How will you test sulphur by lead acetate solution? [2]
 d) Why acetic acid is added before lead acetate in the test of sulphur? [2]
 e) Deep violet coloration indicates the presence sulphur in organic compound. Write that reaction. [2]
21. The word mole was derived from latin word means pile and was introduced by the German chemist W. Ostwald's in 1896. [1]
 a) Define mole of substance. [3]
 b) How mole is related with molar mass, molar volume, and Avogadro's number? [2]
 c) The cost of common salt is Rs. 25 per kg. What is the cost of 1 mole of common salt? [2]
 d) Calculate the number of atoms of each element in 8 g of CaCO₃. [2]
22. Avogadro's had made a clear difference between atom and molecule. He corrected Berzelius hypothesis. [1]
 a) State Avogadro's hypothesis. [2]
 b) How is Avogadro's hypothesis in accordance with Dalton's theory? [1]
 c) Define vapour density of gas. [4]
 d) Deduce the relation, molecular mass = 2 x vapour density. [2]
 e) element is in fractional? Provide a suitable example of it.

First Term Examination – III

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

1. The symbolic representation of Astatine is
 a) Sb b) As c) At d) W
2. Azimuthal quantum number was proposed by
 a) Sommerfeld b) Boh c) Land d) George Uhlenbeck

3. Which of the following set of quantum number is not possible?
- a) $n = 2$ $l = 1$ $m = 0$ $s = +1/2$
 b) $n = 2$ $l = 2$ $m = +1$ $s = -1/2$
 c) $n = 2$ $l = 1$ $m = -1$ $s = +1/2$
 d) $n = 2$ $l = 1$ $m = 0$ $s = -1/2$
4. The term 'molecule' was coined by:
 a) Dalton b) Avogadro c) Berzelius d) Rutherford
5. 180 gm of pure water is equal to:
 a) 1 mole b) 10 moles c.)100 moles d) 18 moles
6. The oxidation state of nitrogen in NH_3 is
 a) $+1/2$ b) $+3$ c) -1 d) -3
7. When NaCl is dissolved in water, Na^+ ion is
 a) hydrolyzed b) oxidized c) Reduced d) hydrated
8. Bond length of C-C bond in diamond is
 a) 1.54 \AA° b) 1.42 \AA° c) 1.32 \AA° d) 3.54 \AA°
9. Which of the following is not the allotrope of phosphorus
 a) Red phosphorus b) Yellow phosphorus c) Black phosphorus d) Pink phosphorus
10. Vital force theory was discarded by
 a) Berzelius b) Wohler c) Bohr d) Kolbe
11. Functional group of aldehyde is
 a) $-\text{OH}$ b) $-\text{COOH}$ c) $-\text{CHO}$ d) $-\text{NH}_2$

Group 'B'

[8×5 = 40]

12. How does Bohr's theory predict the origin of line spectra of hydrogen atom? Draw a well labeled diagram showing various spectral series of hydrogen spectrum. [2+3]
13. Define oxidation number. Also, Balance the following redox reactions by oxidation number method. [1+2+2]
 a) $\text{Zn} + \text{HNO}_3 \rightarrow \text{Zn}(\text{NO}_3)_2 + \text{NO} + \text{H}_2\text{O}$
 b) $\text{Cu} + \text{HNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + \text{NO} + \text{H}_2\text{O}$
14. a) What is reducing agent? Differentiate between oxidation and reduction. [1+2]
 b) How can you distinguish between oxidation number and valency? [2]
15. Write down the postulates of Dalton's atomic theory. 32 parts by wt. of oxygen combines with 32 parts by wt. of Sulphur to form SO_2 and 48 parts by wt. of oxygen combines with 32 parts by wt. of sulphur to form SO_3 . How do these data illustrate the law of multiple proportion? Define vapour density. [2+2+1]
16. One of the examples of homologous series is given below.
 CH_3OH
 $\text{CH}_3\text{CH}_2\text{OH}$
 X
 $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$
- a) Define homologous series. [1]
 b) Find the mass difference between successive members of above homologous series and calculate the molecular mass of X. [2]
 c) What any four characteristics of homologous series. [2]
17. What happens when?
 a) CO gas treated with chlorine in presence of sunlight.
 b) CO is heated with hydrogen in presence of $\text{ZnO} + \text{Cu}$.
 c) CO is heated with finely divided Ni powder.
 d) CO is heated with ferric oxide.
 e) CO reacts with haemoglobin. [1+1+1+1+1]

18. Name any two allotropic forms of phosphorus. How is phosphine gas prepared in laboratory (only reaction)? Write suitable reactions to show basic nature of phosphine gas, mention any two uses of phosphine gas. [1+1+2+1]
19. Differentiate between diamond and graphite. How would you convert CO into CO₂ and vice-versa? What is fullerene? [2+2+1]

Group 'C'

[3×8=24]

20. a) State Avogadro's hypothesis. Derive the relationship between molecular wt. and vapour density. [1+3]
 b) The cost per mole of sugar is Rs.40. How much a packet of sugar containing 3 kg would cost? [2]
 c) Calculate the weight of 7 atom of hydrogen. [2]
21. Write short notes on:
 a) Principal quantum number [2]
 b) Quantization of angular momentum [2]
 c) Heisenberg uncertainty principle. [2]
 d) de-Broglie's wave equation. [2]
22. What is functional group? Write the features of functional groups in organic compound. Write homologous series of following functional groups
 a) -CO-
 b) -COOH [2+2+2+2]

First Term Examination – IV

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Group 'A'

Rewrite the correct option of each question in your answer sheet

[11×1=11]

- Oxygen has positive oxidation state in
 a) H₂O₂ b) Cl₂O c) F₂O d) NaCl
- Magnetic quantum number was proposed by
 a) Sommerfeld b) Bohr c) Lande d) George Uhlenbeck
- The angular momentum of electron in an orbital is given by
 a) $mvr = nh/2\pi$ b) $mvr = \sqrt{l(l+1)} \cdot h/2\pi$ c) both a and b d) none
- Which of the following pairs of compounds illustrate the law of multiple proportions?
 a) H₂S and SO₂ b) NH₃ and NCl₃ c) CuO and Cu₂O d) FeCl₃ and NCl₃
- The no. of molecules in 16 gm of methane is:
 a) 3.0×10^{23} b) 6.02×10^{23} c) 6.023×10^{23} d) 6.026×10^{23}
- Phosphorus has oxidation state of +3 in
 a) orthophosphoric acid b) phosphorous acid
 c) metaphosphoric acid d) pyrophosphoric acid acid
- Oxidation number of iron in potassium ferrocyanide, K₄[Fe(CN)₆] is
 a) +2 b) +3 c) +4 d) +1
- Which of the following is the hardest substance known?
 a) Graphite b) Carborundum c) Diamond d) Coke
- Phosphine reduce heavy metal salt into;
 a) metal phosphide b) phosphoric acid c) phosphorus pentoxide. d) phosphorus trioxide
- Vital force theory was given by
 a) Wohler b) Berzelius c) Kolbe d) Bohr

11. General formula of alkyl group is
 a) C_nH_{2n+2} b) C_nH_{2n} c) C_nH_{2n-2} d) C_nH_{2n+1}

Group 'B'

[8×5=40]

12. Define the term quantum number. What are the values of four quantum number for 19th electron of chromium (Atomic number=24)? Name the quantum number that specifies the energy of an electron in an atom. What designation is given to an orbital having n=3 and l=2? [1+2+1+1]
13. Define oxidation number. Also, Balance the following redox reactions by oxidation number method. [1+2+2]
 a) $Zn + HNO_3 \rightarrow Zn(NO_3)_2 + N_2O + H_2O$
 b) $Cu + HNO_3 \rightarrow Cu(NO_3)_2 + NO + H_2O$
14. a) What is oxidizing agent? Differentiate between oxidation and reduction. [1+2]
 b) How can you distinguish between oxidation number and valency? [2]
15. One volume of nitrogen combines three volumes of hydrogen to form two volumes of ammonia. Which law of stoichiometry does this data illustrate? State the law. What is the present position of the law of indestructibility of matter? Define molar volume. [1+1+2+1]
16. Define homologous series and write a series containing –CHO as functional group. What are the structural formulae and IUPAC name of first members of
 a) Carboxylic acid.
 b) Amide
 c) Ester [2+1+1+1]
17. Write down the properties and uses of diamond and graphite. [2.5+2.5]
18. How is phosphine gas prepared from calcium phosphide and phosphonium iodide? Write a chemical reactions to show reducing property of phosphine gas. [2 + 3]
19. A non – metal X exist in two different forms Y and Z. Y is the hardest natural substance, whereas Z is the good conductor of electricity.
 a. Identify X, Y and Z. [1.5]
 b. Why is Y hardest but Z is soft and slippery in nature? [2]
 c. Name the latest discovered allotrope of carbon and write any it's uses. [1.5]

Group 'C'

[3×8=24]

20. a) Prove that 'Gram molecular wt. of any gas occupies 22.4L at NTP.' Calculate the Vapour density of CO_2 . [3+1]
 b) Calculate the absolute wt. of one amu. [2]
 c) The cost per kg of sugar is Rs. 110. How much a packet of sugar containing 9 moles would cost? [2]
21. a) What are stationary state? Symbolize them.
 b) Write down the limitations of Bohr's atomic model. (Any two)
 c) Which principle goes against the concept of Bohr's fixed orbits? Explain.
 d) Draw a well labeled diagram showing various spectral series of hydrogen spectrum. [2+1+2+3]
22. Define organic compounds and organic chemistry. Name the unique property of carbon which is responsible for large number of organic compound. Write down the difference between organic and inorganic compounds. [2+1+5]

Second Term Examination – I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

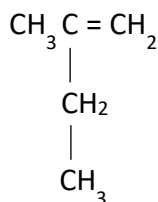
Group 'A'

Rewrite the correct option in your answer sheet.

[11×1=11]

1. The molecular mass of H_2PO_4 is,
 a. 98 amu b. 49amu c.96 amu d. 36 amu

2. In the conversion of $\text{Cl}_2 \rightarrow \text{ClO}_3^-$ the oxidation state of bromine changes from
 a. -1 to 0 b. 0 to +5 c. 0 to -1 d. 0 to -5
3. What is the volume of oxygen at a pressure of 3.5 atm if its volume at 1 atm is 3.15L at the same temperature?
 a. 0.80L b. 0.90 L c. 0.10 L d. 1.0L
4. The gases show ideal behavior at
 a. High temperature and low pressure b. Low temperature and high pressure
 c. High temperature and high pressure d. Low temperature and Low pressure
5. Which one of the following statement is not correct?
 a. $2p_x$, $2p_y$ and $2p_z$ orbitals are in the same energy state
 b. 2s electron is in lower energy state than 2p electron
 c. Electronic configuration of carbon atom is $1s^2 2s^2 2p_x^2$
 d. The energy level of a 3d electron is higher than 4s electron
6. NH_3 gas is formed by Haber's process in the industrial scale. Formation of ammonia from nitrogen and hydrogen is reversible $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$, $\Delta H = -22.4 \text{ Kcal mol}^{-1}$
 Which conditions of pressure and temperature favour the reaction?
 a. High pressure and high temperature b. High pressure and low temperature
 c. Low pressure and high temperature d. Low pressure and low temperature
7. Which of the following has the coordinate covalent bond?
 a. NaOH b. NH_4^+ c. H_2O d. NH_3
8. The correct name for the given compound is



- a. 2-methylbutene b. 2-ethylpropene` c. 2-ethylpentanne d. 3methylbut-2-ene
9. The number of molecules in 18g of water is
 a. 3.0×10^{23} b. 6.02×10^{23} c. 6.023×10^{23} d. 6.026×10^{23}
10. Molecular Weight of a Volatile Compound is equal to
 a. Its vapour density b. square of its vapour density
 c. half of its vapour density d. double of the value of its vapour density.
11. Which of the following is the foreign element?
 a. C b. H c. N d. O

Group 'B'

[8×5 = 40]

12. a. Derive $PV=nRT$. [2]
 b. Through the two ends of a glass-tube of length 2 meters, hydrogen chloride (HCl) and ammonia (NH_3) gases are allowed to enter. At what distance from ammonium chloride will first appear? [3]
13. a. Distinguish between efflorescent and deliquescent substances with one example of each. [2]
 b. Define the term surface tension and viscosity. [1+1]
 c. Why does a liquid drop assume the spherical shape? [1]
14. a. An atom has 2 electrons in first shell, 8 electrons in second shell 8 electrons in third shell and 1 electron in fourth shell.
 b. Write the name of the element involved and its electronic configuration. [1]
 c. Calculate the number of p electrons [1]
 d. Calculate the total number of orbitals [1]
 e. Write the set of all 4 quantum numbers of the valence electron. [2]

15. State Le-Chatelier's principle. Derive the relation between K_p and K_c for the reaction,
 $aA(g) + bB(g) \rightleftharpoons cC(g) + dD(g)$ [1+4]
16. a. Define Dative bond with an example? [2]
 b. Draw Lewis structure for
 i. $MgCl_2$ ii. H_2SO_4 iii. KNO_3 [3]
17. What is sodium extract test? How would you detect Sulphur present in organic compound? [Any two tests] [1+4]
18. a. Determine the empirical formula of an organic compound having following percentage composition:
 $C = 52.11\%$, $H = 13.03\%$, $O = 34.84\%$ [2+3]
 b. The cost per kg of sugar is Rs. 120. How much a packet of sugar containing 14 moles would cost?
19. 10 gram of impure Zinc reacts with excess of dilute sulphuric acid to give zinc sulphate and hydrogen
 ($Zn=65$, $S=32$, $O=16$)
 a. Which one is limiting reactant?
 b. Calculate the number of moles of sulphuric acid consumed.
 c. Calculate the mass of $ZnSO_4$ formed
 d. What volume of hydrogen evolved at $27^\circ C$ and 3 atm pressure? [1+1+1+2]

Group 'C'

[3×8=24]

20. Different methods are involved in balancing the chemical reactions. Among them, balancing the equation by oxidation no. method is one of the most convenient methods of balancing redox reaction.
 1. Define oxidation number. Justify, oxidation and reduction occur simultaneously. [1+2]
 a. Calculate the oxidation number of following underline element [2]
 i. $K_3[\underline{Fe}(CN)_6]$ ii. $\underline{P}O_4^{3-}$
 b. Balance the following chemical reaction by oxidation number method: [3]
 $2n + HNO_3 \rightarrow Zn(NO_3)_2 + NH_4NO_3 + H_2O$
21. a. Name the allotropes of phosphorus. Give the action of CO on
 i. heated nickel powder
 ii. Chlorine gas in presence of sunlight
 iii. Fe_2O_3 [1+3]
 b. Define functional group. Write down the first members of aldehyde, carboxylic acid and ketone. [1+3]
22. Neil Bohr proposed an atomic model based on Planck's quantum theory to overcome the limitation of Rutherford's atomic model:
 a. How Bohr's theories explain the origin of hydrogen spectra? Name the different spectral lines with a labeled diagram. [3+2]
 b. Define Hund's rule of maximum multiplicity. Why is it called so? Illustrate the Hund's rule with reference to electronic configuration of nitrogen. [1+1+1]

Second Term Examination – II

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Group 'A'

Rewrite the correct option in your answer sheet.

[11×1=11]

1. Laws of Stoichiometry are based on
 a) Boyle's Law b) Richter Theory c) Berzelius Theory d) Dalton's atomic Theory
2. Which has the maximum no. of atoms?
 a) 24 g of C b) 56g of Fe c) 26 g of Al d) 108g of Ag
3. Which of the following electron denoted by the following quantum number has the highest energy?
 a. 3, 2, 1, +1/2 b) 4, 2, -1, -1/2 c) 3, 1, 0, -1/2 d) 5, 0, 0, +1/2

4. Which of the following is the relation between K_p and K_c for the reaction
 $N_2 + 3H_2 \rightleftharpoons 2NH_3$
 a) $K_p = K_c (RT)^3$ b) $K_c = K_p(RT)^{\Delta n}$ c) $K_p = K_c/(RT)^{-2}$ d) $K_c = K_p RT^{\Delta n}$
5. What are the exceptions of the octet rule?
 a) The incomplete octet of central atom b) An odd number of electrons on central atom.
 c) Expanded octet of the central atom d) All of these
6. ${}^6C^{12}$ and ${}^6C^{14}$ are
 a) isotopes b) isobars c) isotones d) isomers
7. In the conversion of $MnO_4^- \rightarrow Mn^{++}$ the oxidation state of Mn changes from
 a) -8 to 0 b) +6 to +2 c) +7 to 0 d) +7 to +2
8. What is the volume of oxygen at a pressure of 3.5 atm. if its volume at 1 atm is 3.15L at the same temperature?
 a) 0.80L b) 0.90 L c) 0.10 L d) 1.0L
9. With a rise in temperature, surface tension of liquid
 a) Increases b) Decreases c) Remains same d) None
10. Cyclic compound possessing alternative double and single bond is
 a) Homocyclic b) Alicyclic c) Aromatic d) Aliphatic
11. In the detection of both nitrogen and Sulphur, blood red color is observed due to?
 a) $FeCl_3$ b) $Fe [CNS]_3$ c) $Fe_4[Fe(CN)_6]_3$ d) $Na_4[Fe(CN)_6]$

Group 'B'

[8×5 = 40]

12. a) State Dalton's law of partial pressure. Mention its application. [2]
 b) 0.23g of volatile liquid occupies 126.4 ccs at 27 °C and 760 mm Hg pressure. Calculate the molecular weight of the liquid. How many molecules of the liquid are present in 0.23g? [3]
13. a) Define surface tension. Discuss the important phenomena of surface tension in reference to capillary action and spherical shape of liquid drop. [1+1]
 b) Define the term [1+1+1]
 i. Water of crystallization ii. Unit crystal iii. Deliquescence substance
14. An atom has 2 electrons in first shell (K), 8 electrons in second shell (L) and 2 electrons in third shell (M). Find the following
 a) Name the element which involved in above electronic configuration. [1]
 b) Number of sub-shells [1]
 c) Number of unpaired electrons. [1]
 d) Number of s and p-electrons. [1]
 e) Possible values of azimuthal quantum number for the electrons on the outermost shell. [1]
15. For general gaseous reaction $aA + bB \rightleftharpoons cC + dD$
 a) Explain law of mass action. [2]
 b) Derive the relationship between K_p & K_c . [3]
16. a) What are the exceptions of octet rule? [2]
 b) Draw Lewis structure for [3]
 i. N_2O_3 ii. H_3PO_4 iii. NH_4^+
17. a) 6 g of an element x combine with 16g of another element y to give 0.5 mole of a compound xy. What is the molecular mass of xy? [2]
 b) Determine the molecular formula of an organic compound having following percentage composition:
 C=32% , H= 4% , O = 64% [3]
18. 20 gm of 40% pure $CaCO_3$ if reacted with 5gm of HCl to produce $CaCl_2$, H_2O and CO_2 .
 a) Find the limiting agent.
 b) Calculate the mass of calcium chloride formed.
 c) How many no. of water molecules are produced?
 d) Calculate the volume of CO_2 produced at 27°C and 5 atm. pressures. [1+1+1+2]

19. Define isomerism. Write down the structure and IUPAC name of functional isomers of
 a) C_2H_6O b) C_3H_6O [1+2+2]
- Group 'C'** [3×8=24]
20. There are different types of chemical reactions, like neutralization reaction, hydrolysis reaction, polymerization reaction, redox reaction etc.
- a) What is redox reaction? [1]
 b) Define oxidation number. [1]
 c) Calculate the O.N. of following underline element [2]
 i. $K_4[\underline{Fe}(CN)_6]$ ii. $Cr_2O_7^{2-}$
 d) Balance the following reaction by oxidation number or ion electron method. [3]
 $KMnO_4 + HCl \rightleftharpoons KCl + MnCl_2 + H_2O + Cl_2$
 e) How many moles of HCl act as R.A.? [1]
21. Chemist realized that, the obstacle for the development of organic chemistry is vital force theory.
- a) What is vital force theory? [1]
 b) Write down the modern definition of organic compound. [1]
 c) Name the first organic compound that is prepared in lab. [1]
 d) Discuss about the catenation properties of Carbon. [1]
 e) How is phosphine gas prepared in laboratory? [2]
 f) Convert CO into CO_2 and vice-versa. [2]
22. Quantum numbers are those atomic parameters that are used to describe each electron in an atom completely.
- a) Name four quantum number. Define any one of them. [2]
 b) An electron of an atom possesses the quantum number $n=3, l=0$ and $m=0$. What do they mean? [1]
 c) Which quantum number specifies the energy of an electron in an atom? [1]
 d) What information is provided by the magnetic quantum number? [1]
 e) What are the values of spin quantum number of two electrons present in a same orbital? [1]
 f) What are the values of four quantum numbers for the 19th electron of chromium? [2]

Second Term Examination – III

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

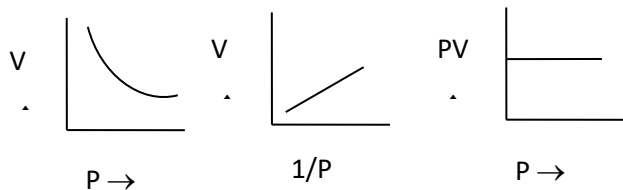
Attempt all questions:

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

1. Different weight of oxygen in the various oxides of nitrogen proves the law of:
 a) conservation of mass b) equivalent proportion
 c) multiple proportion d) constant proportion
2. Which of the following orbital does not exist?
 a) 1s b) 2p c) 3d d) 3f
3. The oxidation number of oxygen in hydrogen peroxide is
 a) +1 b) +2 c) -1 d) -2
4. Among the plots of P vs V as given below which one corresponds to Boyle's law?



All of the them

5. Equilibrium of the reaction: $2SO_2 + O_2 \rightleftharpoons 2SO_3 + 45.2Kcal$ will shift to left at:
 a) low temperature and low pressure b) high temperature and low pressure

- c) low temperature and high pressure d) high temperature and high pressure
6. What are the exceptions to the octet rule?
 a) The incomplete octet of the central atom b) An odd number of electrons on the central atom.
 c) Expanded octet of the central atom d) All of these
7. Which of the following electronic species has the largest size
 a) N^{3-} b) O^{2-} c) F^- d) Na^+
8. Which has a 2D hexagonal layered structure?
 a) Diamond b) Graphite c) Fullerene d) Coal
9. Which of the following is a wrong statement about phosphine gas
 a) It is a reducing agent. b) It is used as smoke screening in war.
 c) It is used as an oxidizing agent. d) It has a basic nature.
10. The functional group of aldehydes is
 a) $-COOH$ b) $-CHO$ c) $-CO-$ d) $-COOR$
11. Vital force theory was discovered by
 a) Berzelius b) Wohler c) Bohr d) Kolbe

Group 'B'

[8×5 = 40]

12. a) Calculate the oxidation number of the underlined element :
 i) $Ca(\underline{O}Cl)Cl$ ii) $\underline{N}H_4^+$ [1+1]
 b) Balance the following redox reaction by the oxidation number method or ion electron method.
 $H_2S + HNO_3 \rightarrow H_2O + NO + S$ [3]
13. State Faraday's second law of electrolysis. How long a current of 3 amperes have to be passed through a solution of $AgNO_3$ to coat a metal surface of 80 cm^2 with a 0.0005 cm thick layer? (*Density of Ag = 10.5 g/cc and Ag = 108 amu*). [2+3]
14. Some reactions are reversible in nature. Le-Chatelier's principle is a rule that positions to the left or right by altering specific conditions of the reaction.
 a) State Le-Chatelier's principle. [1]
 b) An example of an equilibrium reaction can be seen between hydrogen and nitrogen
 $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$.
 From the above reaction answer the following:
 When the temperature of the system is decreased the yield of NH_3 increases.
 i. State whether the forward reaction is exothermic or endothermic. Explain your answer. [2]
 ii. Explain the effect of increasing pressure in the above reaction keeping the temperature constant. [1]
 iii. How are K_P and K_C related to each other in the above-mentioned reaction? [1]
15. The first ionization energies of second period elements are given below:
- | Name of element | Li | Be | B | C | N | O | F | Ne |
|---------------------|-----|-----|-----|------|------|------|------|------|
| First I.E. (KJ/mol) | 520 | 899 | 801 | 1086 | 1403 | 1314 | 1681 | 2020 |
- a) Define ionization energy. [1]
 b) Mention the factors that affect the value of I.E. [2]
 c) Why is the ionization energy of nitrogen higher than oxygen? [2]
16. a) Define hydrogen bonds with an example. [2]
 b) Draw the Lewis dot structure of:
 i. Al_2O_3 ii. CO_2 iii. NH_4^+ [1+1+1]
17. a) Write any two methods for the preparation of phosphine gas. [2]
 b) What happens when?

- i. CO is passed over finely divided Ni. [1]
- ii. CO is treated with Cl₂ in the presence of sunlight. [1]
- iii. CO is heated with H₂ in presence of ZnO + Cu catalyst. [1]

18. Lassaigne's test is an important test for the detection of foreign elements present in an organic compound.
- a) Why is it necessary to prepare sodium extract to detect foreign elements in an organic compound? Why is it usually alkaline? [2+1]
 - b) Write the IUPAC name of the following compounds. [1+1]
 - i. COOH – CH₂ – CH₂ – COOH
 - ii.
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH} - \text{CH} = \text{CH}_2 \end{array}$$

19. Define homologous series. Write down the characteristics of homologous series. What are the structural formulae and IUPAC names of
- i. 1st member of carboxylic acid.
 - ii. 1st member of Amide [1+2+1+1]

Group 'C' [3×8=24]

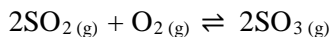
20. a) Consider a reaction
- $$\text{Fe}_2\text{O}_3 + 3\text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2$$
- 10 gm of Fe₂O₃ is reacted with 9 gm of CO.
- i. Find the limiting reactant. [1]
 - ii. How many moles of unreacted reactant is left over? [1]
 - iii. Calculate the mole of CO consumed in the reaction. [1]
 - iv. What mass of NaOH is required to absorb the whole CO₂ produced? [2]
- b) Determine the empirical formula of an organic compound having the following percentage composition:
C = 32% , H = 4% & O = 64% [2]
- c) State the law of gaseous volume. [1]
21. a) An atom has 2 electrons in the first shell, 8 electrons in the second shell 8 electrons in third shell and 1 electron in fourth shell.
- i. Write the name of the element involved and its electronic configuration.
 - ii. Calculate the number of **s** and **p** electrons
 - iii. Calculate the total number of orbitals
 - iv. Write the set of all 4 quantum numbers of the valence electron. [1+1+1+2]
- b) State and explain the de-Broglie wave equation. [2]
- c) State the Pauli's Exclusion principle. [1]
22. a) State and explain Charle's Law. [4]
- b) Derive the relation $P_1V_1/T_1 = P_2V_2/T_2$. [2]
- c) A balloon can hold 1000 cc of air before bursting. The balloon can hold 975 cc of air at 5° C. Will it burst when it is taken into a home at 25° C? Assume that the gas pressure in the balloon remains constant. [2]

13. State Faraday's second law of electrolysis. 1.52 gm of a trivalent metal **M** was deposited at the cathode by passing a current of 2.5 amperes through its salt solution (metal sulphate) for 30 minutes. What is the atomic mass of **M**. [2+3]

14. Some reactions are reversible in nature. Le-Chatelier's principle is a rule that positions to the left or right by altering specific conditions of the reaction.

a) Show your acquaintance with Le-Chatelier's principle. [1]

b) An example of an equilibrium reaction can be seen between SO₂ and O₂



From the above reaction answer the following:

When the temperature of the system is decreased the yield of SO₃ increases.

i. State whether the forward reaction is exothermic or endothermic. Explain your answer.

ii. Explain the effect of increasing pressure in the above reaction keeping the temperature constant.

iii. How are K_P and K_C related to each other in the above-mentioned reaction? [1]

15. The first ionization energies of second period elements are given below:

Name of element	Li	Be	B	C	N	O	F	Ne
First I.E. (KJ/mol)	520	899	801	1086	1403	1314	1681	2020

a) Why is there a steep rise in I.E. from carbon to nitrogen? [2]

b) How does nuclear charge influence the magnitude of the ionization energy? [1]

c) Which of the above elements is most difficult to ionize? Why? [2]

16. a) Show your acquaintance with a dative bond with an example. [2]

b) Draw the Lewis dot structure of:

i. MgCl₂ ii. NH₃ iii. H₃O⁺ [1+1+1]

17. a) Diamond is a bad conductor of electricity while graphite is a very good conductor. Explain. What happens when?

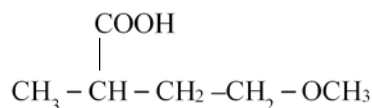
b) White phosphorus is heated with caustic soda solution.

c) Phosphine is passed through copper sulphate solution. [2+1.5+1.5]

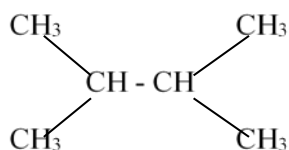
18. a) Define foreign elements. How do you detect the presence of nitrogen and sulphur together in the organic compound? Write down the IUPAC name of [2+1]

b) Write the IUPAC name of the following compounds. [1+1]

i.



ii.



19. What is a functional group? Write down the functional group and example of each of the following.

a) Alcohol b) Nitroalkane c) Amine d) Ketone [1+4]

Group 'C'

[3×8=24]

20. a) 20 gm of 40% pure CaCO_3 if reacted with 5 gm of HCl to produce CaCl_2 , H_2O and CO_2 .
- Find the limiting agent. [1]
 - Calculate the mass of calcium chloride formed. [1]
 - How many no. of water molecules are produced? [1]
 - Calculate the volume of CO_2 produced at 27°C and 5 atm pressure. [2]
- b) A compound made up of oxygen and carbon contains 27.27% C and 72.72% oxygen by mass. Calculate the empirical formula of the compound. [2]
- c) State the law of constant proportion. [1]
21. a) An atom has 2, 8 and 3 electrons in K, L and M shells respectively. [1+1+1+2]
- Write the name of the element involved and its electronic configuration.
 - Calculate the number of s and p electrons.
 - Calculate the total number of orbitals.
 - Write the set of all 4 quantum numbers of the 11^{th} electron.
- a) State and explain Heisenberg's Uncertainty Principle. [2]
- b) State the Hund's rule of maximum multiplicity. [1]
22. a) State and explain Boyle's Law. [4]
- b) State and explain Dalton's Law of partial pressure. [2]
- c) A gas cylinder containing cooking gas can withstand pressures up to 14.9 atm. The pressure gauge indicates 12 atm at 27°C . If a sudden fire occurs in the building, the cylinder's temperature will start rising. At what temperature will it explode? [2]

Send - Up Examination – 2079

Class: XI

Time: 3 hrs

F.M.: 75

P.M.: 30

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11×1=11]

- Which of the following pairs of substances illustrate the law of multiple proportions?
 - CaO & Ca(OH)_2
 - NaCl & Ca(OH)_2
 - CO & CO_2
 - none of these
- Atomicity of Neon is:
 - 2
 - 1
 - 3
 - 4
- The transition of electron in hydrogen atom from 4^{th} to 2^{nd} energy level emits a spectral line called:
 - lyman series
 - balmer series
 - paschen series
 - brackett series
- In NH_3 , N - atom is _____ hybridized:
 - SP^2
 - SP^3
 - SP
 - none
- Charring of sugar by conc. H_2SO_4 is its:
 - Oxidizing action
 - reducing action
 - Dehydrating action
 - dehydrogenation action
- The gas involved in Bhopal gas leak tragedy was:
 - Methyl isocyanide
 - methyl isocyanate
 - Methyl cyanide
 - methane gas
- Which one of the following elements does not show variable valency?
 - Cu
 - Ag
 - Zn
 - Fe
- Which of the following liquid will be relatively difficult to be sucked into pipette?
 - Water
 - Benzene
 - Lemon Juice
 - Glycerol
- Bleaching action of bleaching powder is due to the formation of:
 - O_2
 - OCl^{-1}
 - Cl_2
 - Cl^-

10. Tritium is an isotope of:
 a) Tellurium b. titanium c. hydrogen d. tantalum
11. CO on heating with Ni gives:
 a) Ni(CO)₄ b) Ni(CO)₃ c) Ni₂(CO)₈ d) Ni(CO)₂

Group 'B'

Give short answer to the following questions

[8×5= 40]

12. a) State Hund's rule of maximum multiplicity. Why is it called so? Illustrate the Hund's rule with reference to electronic configuration of nitrogen. [1+1+1]
 b) Write the electronic configuration of Cr⁺⁺ & Cl⁻ [1+1]

OR

- a) Draw an orbital picture of ethane showing σ - bonds. [2]
 b) What are the features of tetrahedral geometry? [1]
 c) Mention any four assumptions of VBT. [2]
13. Consider a reaction:
 $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$
 10 gm of Fe₂O₃ is reacted with 9 gm of CO.
 a) Find the limiting reactant. [1]
 b) How many moles of unreacted reactant is left over? [1]
 c) Calculate the moles of CO consumed in the reaction. [1]
 d) What mass of NaOH is required to absorb whole CO₂ produced? [2]
14. a) Write the molecular formula of Hypo and also write its one use. [1+1]
 b) Write any two differences between the bleaching action of Cl₂ and SO₂. [2]
 c) Identify a viscous liquid that react with table sugar (C₁₂H₂₂O₁₁) giving a charred (black) mass. Give the reaction involved. [1]

OR

- a) Give reason: [1+1]
 i) CO₂ is an acidic oxide.
 ii) Al₂O₃ is an amphoteric oxide
- b) How does CFC deplete the ozone layer? [2]
 c) What happens when ozone is passed into starch iodide paper? [1]
15. There are different types of chemical reactions like neutralization reaction, hydrolysis reaction, polymerization reaction, redox reaction etc.
 a) What is redox reaction? [1]
 b) Balance the following reaction by oxidation number or Ion electron method: [2]
 $KMnO_4 + HCl \rightarrow KCl + MnCl_2 + H_2O + Cl_2$
 c) Show that 1F = 96500 coulombs [2]
16. a) Define flux with example. [1]
 b) What are the main ores of sodium metal? [1]
 c) How is sodium metal extracted by using down's cell? Explain with suitable diagram. [3]
17. One of the examples of homologous series is given below:
 CH₃ - Cl
 (A)
 CH₃ - CH₂ - CH₂ - Cl
 (B)
 CH₃ - CH₂ - CH₂ - CH₂ - CH₂ - Cl
 a) Define homologous. [1]
 b) Write the compounds (A) and (B). [2]
 c) Write their IUPAC names. [1]

- d) Find the mass difference between successive members of the series. [1]
18. A primary alkyl bromide (A), C_4H_9Br reacted with alcoholic KOH to give compound (B). Compound (B) reacted with HBr to give (C) which is an isomer of (A). When (A) reacted with sodium it gave compound (D), C_8H_{18} which was not a straight chain hydrocarbon. Draw the structure of A, B, C and D and write equations for all reactions. [5]
19. Halogens are highly reactive, elements. They have high electro negativity values & they are even strong oxidizing agents.
- a) What happens when chlorine is treated with
 i) Excess NH_3 ii. Cold & dil. NaOH [2]
- b) Is it possible to prepare HBr & HI by using conc. H_2SO_4 as that of HCl? [2]
- c) Define bleaching. [1]

Group 'C'

Give long answer to the following questions

[3×8= 24]

20. a) What are the different types of crystalline solids on the basis of nature of bonding in them? Give at least 2 examples of each. [2]
- b) Define surface tension. Discuss the important phenomena of surface tension in reference to capillary action and spherical shape of liquid drop. [1+2]
- c) An empty glass vessel weighs 50 gm, 148 gm when filled with liquid of density 0.98 gm/cc and 50.5 gm when filled with an ideal gas at 760 mm of Hg and 300 K. Determine the molecular mass of gas. [Ans:123 amu] [3]
21. HNO_3 is manufactured by catalytic oxidation of NH_3 . This process is known as Ostwald's process.
- a) How would you test NO_3^- ion in its aqueous solution? [2]
- b) What happens when NH_3 is treated with? [1+1]
 i) Mercurous nitrate paper ii) Excess Cl_2
- c) What happens when conc. HNO_3 is treated with: [1+1]
 i) Cu ii) Carbon
- d) Why is iron passive with highly conc- HNO_3 ? [2]

OR

Sulphuric acid is one of the largest volumes of industrial chemical produced in the world.

- a) Describe the manufacture of H_2SO_4 by contact process. [4]
- b) Give any two reactions which show that sulphuric acid acts as oxidizing agent. [2]
- c) Draw the flow sheet diagram for the manufacture of urea. [2]
22. A covalent bond is formed by the sharing of electrons between the participating atoms & displacement of these shared electrons take place due to various reasons which bring about certain effects.
- a) Define inductive effect. [1]
- b) How many types of inductive effect are there which causes polarity in molecule? Explain. [2]
- c) Define resonances effect. [1]
- d) How many types of resonance effect are there in the compound? Explain. [4]

Send - Up Examination – 2080

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11×1=11]

1. In the reaction $Fe^{+++} + Sn^{++} \rightarrow Fe^{++} + Sn^{++++}$ acts as:
- a. reducing agent b. oxidizing agent c. electron donor d. both (a) and (c)

2. The main purpose of calcinations and roasting is
 a. to convert the ore into metal oxide
 b. to remove refractory impurities
 c. to convert ore into molten state
 d. to reduce metal oxide to free metal
3. The quantity of electricity required to liberate one gram equivalent of an element is:
 a. 1 amp. b. 96500 amp. c. 96500 coulombs d. 96500 Faradays
4. IUPAC name of $\text{CH}_2(\text{OH})\text{CH}(\text{OH})\text{CH}_2(\text{OH})$ is:
 a. Propane -1,2,3- triol b. 2-Hydroxypropanediol c. Propanol d. 1,2,3- Trihydroxypropane
5. Which of the following is not nucleophile?
 a. NH_3 b. H_2O c. OH^- d. BF_3
6. Calculate the weight in grams of 11.2L of N_2 gas at NTP is:
 a. 28 gm b. 14 gm c. 7 gm d. 15 gm
7. Which of the following rearrangement is correct with respect to the increasing order of acidic strength?
 a) $\text{HCl} < \text{HBr} < \text{HI}$ b) $\text{HCl} > \text{HBr} > \text{HI}$ c) $\text{HI} > \text{HCl} > \text{HBr}$ d) $\text{HCl} < \text{HI} < \text{HBr}$
8. SO_2 reacts with H_2S producing S where SO_2 acts as:
 a) acid b) oxidizing agent c) catalyst d) reducing agent
9. The shape of IF_7 is:
 a. octahedral b. trigonal bipyramidal c) pentagonal bipyramidal d) tetrahedral
10. What is the equation for equilibrium constant (K_c) for the following reaction?

$$\frac{1}{2}\text{A}(\text{g}) + \frac{1}{3}\text{B}(\text{g}) \rightleftharpoons \frac{2}{3}\text{C}(\text{g})$$
 a. $K_c = \frac{[\text{A}]^{1/2}[\text{B}]^{1/3}}{[\text{C}]^{2/3}}$ b. $K_c = \frac{[\text{C}]^{2/3}}{[\text{A}]^2[\text{B}]^3}$ c. $K_c = \frac{[\text{C}]^{2/3}}{[\text{A}]^{1/2}[\text{B}]^{1/3}}$ d. $K_c = \frac{[\text{C}]^{2/3}}{[\text{A}]^{1/2}[\text{B}]^{1/3}}$
11. The gas involved in Bhopal gas leak tragedy was:
 a. Sodium isocyanate b. Methyl isocyanate c. Ethyl isocyanide d. Methane

Group 'B'

Give short answer to the following questions.

[8×5= 40]

12. i) State and derive an expression for Graham's law of diffusion.
 ii) 5 g of hydrogen gas diffuse through a porous membrane in 30 minutes. Find the time required to diffuse the same amount of SO_2 at the identical conditions. [2 + 3]
13. Metallurgy is the branch of science which deals with the extraction of metal from its ore.
 a. What are the differences between minerals and ores?
 b. Name the types of ores concentrated by gravity separation process and froth flotation process.
 c. What is meant by smelting?
 d. What is the importance of flux in metallurgical operation? [1 + 1 + 2 + 1]
14. i) Define oxidation and reduction in terms of electronic concept. [1]
 ii) Balance the following chemical equation by oxidation number method or ion electron method. $\text{Zn} + \text{HNO}_3 \rightarrow \text{Zn}(\text{NO}_3)_2 + \text{NH}_4\text{NO}_3 + \text{H}_2\text{O}$. [2]
 iii) Establish a relationship between electrochemical equivalent and chemical equivalent. [2]
15. Lassaigne's test is used for the detection of foreign element.
 a) Define foreign element. What is the purpose of making sodium extract for the detection of foreign element in an organic compound? [1+2]
 b) Why is Sodium extract alkaline in nature? [1]
 c) What is the composition of sodium extract, if nitrogen is present in the foreign element? [1]
16. Write short note on the following: [2+2+1]
 a) Wurtz reaction b) Decarboxylation c) Dehydrohalogenation
17. Halogens are highly reactive elements. They have high electro negativity values and they are even strong oxidizing agents.

- a) Write down any two reactions which show the oxidizing nature of halogens. [2]
 b) What happens when excess NH_3 is treated with Chlorine? [1]
 c) What happens when NH_3 is treated with CuSO_4 solution? [2]
18. Modern periodic table was given by Mosley in 1913 after Mendeleev periodic table. It helps to study the elements in systematic way.
- a) What do you mean by electronegativity? [1]
 b) What is mean by periodicity of element and what cause periodicity? [2]
 c) How do nuclear charge and size of the atom influence the magnitude of the ionization energy? [2]

OR

- a) Differentiate between nascent hydrogen and molecular hydrogen. [2]
 b) Mention any two uses of Phosphine gas. [1]
 c) What happens when Phosphine gas is passed into CuSO_4 solution? [2]
19. Two scientists, Gulberg and Waage, studied the effect of molar concentrations of reactants and products on the rate of chemical reaction and developed a law which is called law of mass action.
- a. State law of mass action. [1]
 b. Predict the effect of decrease in temperature and pressure on the following equilibrium:

$$\text{N}_2(\text{g}) + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3(\text{g}), \Delta H = -22.4 \text{ Kcal}$$
 [2]
 c. Write the relationship between K_p & K_c for the following reaction:

$$\text{PCl}_5(\text{g}) \rightleftharpoons \text{PCl}_3(\text{g}) + \text{Cl}_2(\text{g})$$
 [1]
 c. Write any two characteristics of equilibrium constant. [1]

OR

In order to overcome the limitations of Rutherford's atomic model, Neil Bohr proposed a model which is known as Bohr's atomic model.

- a. What is quantization of angular momentum? [1]
 b. Write any two limitations of Bohr's atomic model. [1]
 c. What is wave-particle duality of matter? [2]
 d. Write the electronic configuration of:
 i. Cu^{++} ii. F^- [1]

Group 'C'

Give long answer to the following questions.

[3×8= 24]

20. a. State and explain Anti-Markovnikoff's rule or peroxide effect with suitable example. Write the formula and name of functional isomer of $\text{C}_4\text{H}_8\text{O}$ and $\text{C}_3\text{H}_8\text{O}$. [4]
 b. What is racemic mixture? Why is it optically inactive? [2]
 c. Why alkenes only show geometrical isomerism? [1]
 d. Give the reaction to convert ethanol to ethane. [1]
21. It is always found that experiment yield is less than theoretical yield. This theoretical yield is calculated based on limiting reagent.
- a. Calculate the actual amount of H_2 gas produced. [2]
 b. Mention any two reasons for lower values of experimental yield than theoretical yield. [1]
 c. 2gm of Mg is burnt in a closed vessel containing 1.2 gm of O_2 to produce MgO. Find the limiting reagent. [2]
 d) Prove that molecular wt. of any gas is twice its vapour density. [3]
22. Originally nitric acid was manufactured from sparked N_2 and O_2 in Birkeland - Eyde process. Nowadays, it is manufactured by Ostwald's process.
- a) Write down the principle and reactions involved in the manufacture of nitric acid by Ostwald's process. [3]
 b) Draw flow diagram for Ostwald's process. [2]
 c) What happens when highly Conc. HNO_3 is treated with iron? [1]
 d) In ring test which chemical compound is formed? Show with reaction. [2]

OR

Oxygen is the third most abundant element by mass which readily forms oxides with other elements.

- a) Classify the given oxides into their respective category: [3]
 Na_2O , Al_2O_3 , CO , SO_2 , Fe_3O_4 , BaO_2
- b) Why does CO_2 belong to acidic oxide? Show with reaction. [2]
- c) What is the main cause of ozone layer depletion? Mention any two effects of ozone layer depletion. [2]
- d) Mention any two uses of heavy water. [1]

Send - Up Examination – 2080

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11×1=11]

- The oxidation number of Fe in $[\text{Fe}(\text{CN})_6]^{4-}$ is:
a) +2 b) +4 c) +3 d) +6
- What is the molecular formula of bleaching powder?
a) $\text{Ca}(\text{OCl})_2$ b) $\text{Ca}(\text{OH})_2$ c) CaOCl d) $\text{Ca}(\text{OCl})\text{Cl}$
- A real gas follows ideal gas equation at
a) high temperature and low pressure b) low temperature and high pressure
c) high temperature and high pressure d) low temperature and low pressure
- Optical isomer which are non- super imposable mirror image of each other are called
a. mesomer b. enantiomer c. racimic mixture d. diastomer
- The IUPAC name of $\text{COOH}-\text{CH}(\text{OH})-\text{COOH}$ is:
a. Propanoic acid b. Propandioic acid c. 2- Hydroxypropane-1, 3- dioic acid d. Propan- 2 – ol
- How many moles of oxygen molecules are present in 112 ml of O_2 gas at NTP ?
a. 0.05 moles b. 0.5 moles c. 0.005 moles d. 0.01 mole
- What is the molecular formula of Hypo?
a. H_2SO_4 b. $\text{SiO}_2 \cdot x\text{H}_2\text{O}$ c. $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$ d. $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
- The electron affinity of element is in the order
a. $\text{F} > \text{Cl} > \text{O} > \text{I}$ b. $\text{F} > \text{O} > \text{N} > \text{Cl}$ c. $\text{Cl} > \text{F} > \text{Br} > \text{I}$ d. $\text{Br} > \text{I} > \text{Cl} > \text{F}$
- Which of the following molecules has the least bond angle?
a. NH_3 b. H_2O c. BeF_2 d. CH_4
- Equilibrium constant for the reaction $\text{SO}_2(\text{g}) + \text{O}_2(\text{g}) \rightleftharpoons \text{SO}_3(\text{g})$ is K_1 and that for the reaction $2\text{SO}_3(\text{g}) \rightleftharpoons 2\text{SO}_2(\text{g}) + 2\text{O}_2(\text{g})$ is K_2 at 298K. The values of equilibrium constants are related by:
a. $K_2 = K_1$ b. $K_2 = 1/K_1^2$ c. $K_2 = K_1^2$ d. $K_2 = 1/K_1$
- Batch process is used to manufacture:
a. petrol b. cement c. diesel d. cosmetics

Group 'B'

Give short answer to the following questions.

[8×5= 40]

- a) State and explain Dalton's law of partial pressure.
b) A 10 litre flask contains 0.2 mole hydrogen, 0.3 mole nitrogen and 0.4 moles carbondioxide at 25°C. Find
i) the partial pressure of each component of the mixture

- ii) total pressure of the gases. [2 + 3]
13. Even though sodium chloride is one of the cheapest and easily available salts of sodium metal, the extraction of sodium from NaCl was not possible for a long time. But, Down, an American Chemist, extract sodium from common salt by the process of electrolysis. Describe the extraction of sodium by Down's process. Also give advantages of the process. [4 + 1]
14. Redox reaction is the common reaction in our daily life.
- i) Define redox reaction.
- ii) Balance the following redox reaction by oxidation number method or ion electron method. Also point out oxidant and reluctant.
- $\text{KMnO}_4 + \text{H}_2\text{SO}_4 + \text{FeSO}_4 \longrightarrow \text{K}_2\text{SO}_4 + \text{MnSO}_4 + \text{Fe}_2(\text{SO}_4)_3 + \text{H}_2\text{O}$. What is the role of sulphuric acid in the reaction? [1 + 2 + 1 + 1]
15. For the detection of foreign element in organic compound, Lassaigne's test is used.
- a) Why is it necessary to prepare sodium extract for the detection of foreign element in organic compound? [2]
- b) How would you detect the presence of nitrogen in organic compound by Lassaigne's test? [3]
16. Alkane can be prepared from haloalkane, decarboxylation & catalytic hydrogenation of alkene.
- a) Write an example of decarboxylation reaction. [2]
- b) Write the chemical reaction when bromoethane is heated with sodium metal in the presence of dry ether. [2]
- c) How would you prepare ethane from ethyne? [1]
17. a) Write down the principle and reaction for the preparation of chlorine in the laboratory. [2]
- b) How does bromine react with hot and conc. NaOH? [1]
- c) Differentiate between bleaching action of chlorine and SO_2 . [2]
18. In modern periodic table, metals are kept towards left side & non-metals towards right. Many defects of Mendeleev's periodic table are overcome by modern periodic table.
- a) Why is second ionization energy of the element always greater than its first ionization energy? [2]
- b) Why is the electron affinity of oxygen higher than nitrogen? [2]
- c) Define iso-electronic ions. [1]

OR

- a) Describe the preparation of Phosphine gas. [2]
- b) Which one is stronger reducing agent? Nascent hydrogen or molecular hydrogen? Why?
19. a. What is equilibrium constant? [1]
- b. Predict the effect of pressure and temperature on the following equilibrium: $\text{N}_2(\text{g}) + \text{O}_2 \rightleftharpoons 2\text{NO} - 43.2 \text{ Kcal}$ [2]
- c. Chemical equilibrium is dynamic in nature. Comment on this statement. [2]

OR

Quantum number is a set of integers which describes the actual position and energy of an electron inside the atom.

- a. Which quantum number explains the orientation of orbital in a sub shell? [1]
- b. An orbital cannot accommodate more than two electrons. Explain. [1.5]
- c. Write the values of n , l and m for last electron of an atom having atomic number 24. [1.5]
- d. What are degenerate orbitals? [1]

Group 'C'

- Give long answer to the following questions. [3×8= 24]**
20. a. Write the structure and IUPAC name of functional isomers of $\text{C}_4\text{H}_{10}\text{O}$ and $\text{C}_3\text{H}_6\text{O}_2$. [2]
- b. Differentiate electrophile and nucleophile with example. [2]
- c. State and explain with suitable example the Markovnikov's Rule. [2]
- d. Write the reaction when propene reacts with hydrogenbromide in presence of organic peroxide. [2]
21. 200 gm of 90% pure CaCO_3 is completely reacted with excess HCl to produce CaCl_2 , H_2O and CO_2 .
- a) Which one is limiting reactant? [1]

- b) Calculate the mass of CaCl_2 formed. [1]
 c) How many moles of water are produced? [1]
 d) What volume of CO_2 is produced if the reaction is carried out at 27°C and 760 mm Hg pressure? [2]
 e) Show that one gram molecular wt. of any gas occupies 22.4 l at NTP. [3]
22. H_2S is an important analytical reagent. It is used in lab for qualitative analysis of inorganic salts in small quantities at frequent intervals. So, it is prepared by using Kipp's apparatus.
- a) Describe the working mechanism of Kipp's apparatus in preparation of H_2S gas. [3]
 b) Draw the schematic diagram for showing the working mechanism of Kipp's apparatus. [2]
 c) Write down any one reaction which shows H_2S as: [1+1]
 i) reducing agent
 ii) analytical agent
 d) define potash fertilizer. [1]

OR

sulphuric acid is known as king of chemicals. The industrial use of this acid can be taken as indicator of the economic development of that country.

- a. Write down the principle and reactions involved in the manufacture of sulphuric acid by contact process. [3]
 b. Draw the flow diagram for the manufacture of sulphuric acid by contact process. [2]
 c. Write down the reactions which shows: [1+1]
 i. H_2SO_4 as dehydrating agent
 ii. H_2SO_4 as oxidizing agent
 d. Why is the process of manufacturing of sulphuric acid known as contact process? [1]

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Clas Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11×1=11]

1. $\frac{K_p}{K_c}$ for the reaction ; $\text{CO}_{(g)} + \frac{1}{2}\text{O}_{2(g)} \rightleftharpoons \text{CO}_{2(g)}$
 a. 1 b. RT c. $\frac{1}{\sqrt{RT}}$ d. $(RT)^2$
2. Under which conditions will nitrogen behave most like an ideal gas?

	Temperature	Pressure
a.	Low	High
b.	High	Low
a.	Low	Low
a.	High	High

3. A neutral molecule XF_3 has a zero-dipole moment. The element X is most likely
 a. Chlorine b. Boron c. Nitrogen d. Carbon
4. The number of molecules in 36 mg of water is
 a. 1.2×10^{20} b. 1.2×10^{21} c. 1.2×10^{22} d. 1.2×10^{23}
5. Which is the correct order of ease of carbon dioxide production by heating the group II metal carbonates?
 a. $\text{MgCO}_3 < \text{BeCO}_3 < \text{CaCO}_3 < \text{SrCO}_3 < \text{BaCO}_3$ b. $\text{BeCO}_3 < \text{MgCO}_3 < \text{CaCO}_3 > \text{SrCO}_3 < \text{BaCO}_3$
 c. $\text{BeCO}_3 > \text{MgCO}_3 > \text{CaCO}_3 > \text{SrCO}_3 > \text{BaCO}_3$ d. $\text{BeCO}_3 < \text{MgCO}_3 < \text{CaCO}_3 < \text{SrCO}_3 < \text{BaCO}_3$

6. SO_2 reacts with H_2S producing S where SO_2 acts as:
 a. acid b. oxidizing agent c. catalyst d. reducing agent
7. What is the molecular formula of plaster of Paris?
 a. $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ b. $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$ c. $\text{CaSO}_4 \cdot \text{H}_2\text{O}$ d. $\text{CaSO}_4 \cdot 5\text{H}_2\text{O}$
8. CFCl_3 is
 a. Freon-11 b. Freon-12 c. Freon-22 d. Freon-25
9. Sodium-glucose pump is an example of
 a. primary active transport protein b. secondary active transport protein
 b. primary passive transport protein d. secondary passive transport protein
10. Sodium carbonate can be manufactured by Solvay's process but potassium carbonate cannot be prepared because
 a. K_2CO_3 is more soluble b. KHCO_3 is more soluble than NaHCO_3
 c. KHCO_3 is less soluble than NaHCO_3 d. K_2CO_3 is less soluble
11. Batch process is used to manufacture:
 a. Petrol b. Diesel c. Cement d. Drugs

Group 'B'

[8×5= 40]

12. An atom has 2 electrons in first shell, 8 electrons in second shell 8 electrons in third shell and 1 electron in fourth shell.
 a. Write the name of the element involved and its electronic configuration.
 b. Calculate the number of s and p electrons
 c. Calculate the total number of orbit and orbitals
 d. Write the set of all 4 quantum numbers of the valence electron. [1+1+1+2]

OR

- a. Balance the following chemical equation by oxidation number method or ion electron method. $\text{P} + \text{NaOH} + \text{H}_2\text{O} \rightarrow \text{NaH}_2\text{PO}_2 + \text{PH}_3$ [3]
 b. How many coulombs are required to convert 1mole of $\text{Cr}_2\text{O}_7^{2-}$ to Cr^{3+} ? [2]
13. a) Derive: $PV=nRT$. [2]
 b) The temperature of gas is 25°C .

Gas	Pressure (mm Hg)	Volume (mL)	Mass (g)
CO_2	780	X	5
NH_3	Y	700	7
M=?	870	500	4

- i. Identify the value of X, Y and molecular mass (M) of gas. [1+1+1]
14. Modern periodic table was given by Mosley in 1913 after Mendeleev periodic table. It helps to study the elements in systematic way.
 a. Define ionization energy. How do you account for the fact that the first ionization energy of nitrogen is more than that of oxygen? [1+2]
 b. Define isoelectronic species. Which ion would you expect to have smaller size and why, Be^{++} or Li^+ ? [1+1]

OR

The attractive force that holds two or more atoms together in a molecule is called chemical bond.

- a. Differentiate intermolecular and intramolecular hydrogen bond with example. [2]
 b. The geometry of NH_3 and BF_3 molecules are different, why? [2]
 c. Write the shape of H_2O . [1]
15. Metallurgy is the branch of science which deals with the extraction of metal from its ore.
 a. "Every ore is mineral but every mineral is not an ore". Comment on the statement. [2]
 b. Differentiate between pyrometallurgy and electrometallurgy. [2]
 c. Define flux with an example. [1]

16. The extraction of sodium is carried out by Down's process.
- Write the principle involved in this process. [2]
 - Why CaCl_2 is added in the extraction of sodium? [1]
 - Why is sodium not extracted by the electrolysis of an aqueous solution of NaCl ? [1]
 - Why is it collected under kerosine oil during extraction? [1]
17. Organic compounds are assigned proper names based on scientific rules for their systematic study which is known as nomenclature.
- Write the structure of 2-hydroxy -2-methylpropanenitrile. [1]
 - Write the possible isomers of
 - $\text{C}_2\text{H}_4\text{O}_2$
 - $\text{CH}_3\text{-CO-CH}_3$
 [1+1]
 - Can compound having single covalent bond show geometrical isomerism? Give reason. [2]
18. Reaction mechanism describes the successive steps at the molecular level that take place in a chemical reaction.
- | | | | |
|-----------------|---------------|---------------|---------------|
| AlCl_3 | R-OH | Br^+ | CN^- |
|-----------------|---------------|---------------|---------------|
- Identify the electrophile and nucleophile from the above table. [2]
 - Write an example of the following:
 - Markovnikov's rule
 - Huckel's rule
 - Dehydrohalogenation reaction [1+1+1]
19. Fertilizers are one of the largest market commodities for the chemical industry.
- Define fertilizers with an example. What are the essential qualities of good fertilizers? [1+2]
 - Differentiate between batch process and continuous process. [2]

Group 'C'

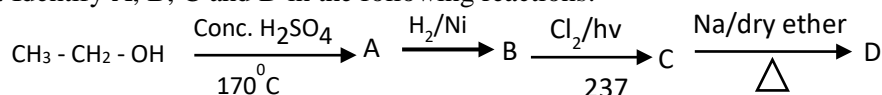
[3×8= 24]

20. i. It is always found that experiment yield is less than theoretical yield. This theoretical yield is calculated based on limiting reagent.
A chemical reaction is carried out by mixing 25g of pure calcium carbonate and 0.75 mole of pure Hydrochloric acid to give CaCl_2 , H_2O and CO_2 .
- Which one is limiting reactant? [1]
 - Calculate the mass of CaCl_2 formed. [1]
 - How many moles of water molecules are formed? [1]
 - What mass of NaOH is required to absorb the whole CO_2 produced in the reaction? [2]
- ii. State Avogadro's hypothesis. Show that one molar volume of any gas is equal to 22.4 L. [1+2]
21. One of compound of Sulphur, Hydrogen Sulphide issued as an analytical reagent for detection of salt during salt analysis in lab.
- Write the chemical equation for the preparation of H_2S gas and discuss about the working principle of Kipp's apparatus. [4]
 - Show that H_2S is acidic in nature [1]
 - Why does chemist prefer to use Kipp's apparatus instead of Woulf's bottle for production of H_2S gas? [1]
 - In contact process, SO_3 gas is absorbed in concentrated H_2SO_4 but not in water to obtain H_2SO_4 . Why? [2]

OR

Oxygen is the third most abundant element by mass which readily forms oxides with other elements.

- Classify the given oxides into their respective category: [3]
 Na_2O , ZnO , CO , SO_3 , Pb_3O_4 , CsO_2
 - How does CFC deplete ozone layer? [2]
 - What is tailing of mercury? [1]
 - Write the principle of manufacture of urea. [2]
22. a. Identify A, B, C and D in the following reactions: [1+1+1+1]



- b. What happens when compound A undergoes ozonolysis? [2]
 c. How can you prove that the Compound A is unsaturated? [2]

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Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11×1=11]

1. For the reaction:

$\text{CO} + \text{Cl}_2 \rightleftharpoons \text{COCl}_2$, the value of $\frac{K_p}{K_c}$ is equal to

- a. 1 b. RT c. \sqrt{RT} d. $\frac{1}{RT}$
2. Which of the following is the unit for surface tension?
 a. dynes.cm b. dynes.cm² c. dynes.cm⁻² d. dynes.cm⁻¹
3. Which one of the following bonds will be the most polar?
 a. N-Cl b. O-F c. C-F d. N-N
4. The number of molecules in 34 mg of ammonia is
 a. 1.2×10^{20} b. 1.2×10^{21} c. 1.2×10^{22} d. 1.2×10^{23}
5. Which is the correct order for increasing order of solubility of group II metal carbonates?
 a. $\text{MgCO}_3 < \text{BeCO}_3 < \text{CaCO}_3 < \text{SrCO}_3 < \text{BaCO}_3$ b. $\text{BeCO}_3 < \text{MgCO}_3 < \text{CaCO}_3 > \text{SrCO}_3 < \text{BaCO}_3$
 c. $\text{BeCO}_3 > \text{MgCO}_3 > \text{CaCO}_3 > \text{SrCO}_3 > \text{BaCO}_3$ d. $\text{BeCO}_3 < \text{MgCO}_3 < \text{CaCO}_3 < \text{SrCO}_3 < \text{BaCO}_3$
6. What happens when SO₂ gas is passed through a moist red flower?
 a. SO₂ is oxidized to Sulphur b. SO₂ is reduced to H₂SO₄
 c. SO₂ is reduced to Sulphur d. Flower gets bleached
7. What is the molecular formula of Epsom salt?
 a. MgSO₄. 5H₂O b. MgSO₄. H₂O c. MgSO₄. 7H₂O d. MgSO₄.2H₂O
8. Freon-12 is
 a. CHClF₂ b. CCl₂F₂ c. C₂Cl₂F₄ d. CFCl₃
9. Sodium-potassium pump is an example of
 a. primary active transport protein b. secondary active transport protein
 c. primary passive transport protein d. secondary passive transport protein
10. The electrolysis of saturated solution of sodium chloride using diaphragm cell can be used to make
 a. Na₂CO₃ b. NaOH c. NaHCO₃ d. NaNO₃
11. Which of the following is related to the batch process?
 a. Requires high-cost equipment b. Cannot be controlled easily
 c. Generally available in fully automated plant d. Involves a sequence of steps followed in a specific order

Group 'B'

[8×5= 40]

12. An atom has 2 electrons in K-shell, 8 electrons in L-shell and 3 electrons in M-shell.

- a. Write the name of the element involved and its electronic configuration.
 b. Calculate the number of s and p electrons.
 c. Calculate the total number of orbit and orbitals
 d. Write the set of all 4 quantum numbers of the 12th electron. [1+1+1+2]

OR

- a. Balance the following chemical equation by oxidation number method or ion electron method.
 $\text{NaOH} + \text{S} \rightarrow \text{Na}_2\text{S} + \text{Na}_2\text{S}_2\text{O}_3 + \text{H}_2\text{O}$ [3]

b. How many coulombs are required to convert 1 mole of MnO_4^- to Mn^{2+} ? [2]

13. a. Derive: $P_1V_1=P_2V_2$ [2]

b. The temperature of gas is 27°C .

Gas	Pressure (mm Hg)	Volume (mL)	Mass (g)
SO_2	760	500	X
CH_4	Y	650	8
HCl	860	Z	10

i. Identify the value of X, Y and Z. [1+1+1]

14. Slater rules are used to determine the effective nuclear charge.

a. Define electron affinity. How do you account for the fact that electron affinity of fluorine is less than that of chlorine? [1+2]

b. Why Cl has a larger size than K^+ though they have the same electronic configuration? [2]

OR

Depending upon the nature of atomic orbitals involved and the extent of overlapping, covalent bond is classified into sigma and pi-bond.

a. Differentiate between sigma and pi-bond. (*Any four*) [2]

b. BCl_3 is trigonal planar whereas PCl_3 is trigonal pyramidal. Why? [2]

c. Write the shape of IF_7 . [1]

15. Metallurgy is the branch of science which deals with the extraction of metal from its ore.

a. Write short notes on froth floatation method. [2]

b. Differentiate between calcination and roasting. [2]

c. Define slag with an example. [1]

16. Ammonia is manufactured by Haber's process. Le-chatelier's principle can be applied in Haber's process for the higher yield of NH_3 .

a. What are the necessary physical conditions for the higher yield of ammonia by Haber's process?

b. What happens when excess NH_3 is passed through CuSO_4 solution?

c. What happens when mercurous nitrate paper is exposed to ammonia gas? [2+2+1]

17. Organic compounds are assigned proper names based on scientific rules for their systematic study which is known as nomenclature.

a. Write the structure of 2-hydroxy-2-methylpropanoic acid. [1]

b. Write the possible isomers of

i) $\text{C}_3\text{H}_6\text{O}$ ii) $\text{CH}_3\text{-COOH}$ [1+1]

c. But-2-ene has two geometrical isomers. Write their names. [1+1]

18. Reaction mechanism describes the successive steps at the molecular level that take place in a chemical reaction.

NH_3	BF_3	H^+	OH^-
---------------	---------------	--------------	---------------

a. Identify the electrophile and nucleophile from the above table. [2]

b. Write an example of the following:

i. Peroxide effect ii. Friedel-craft alkylation.

iii. Wurtz reaction. [1+1+1]

19. Urea is a very much demanded chemical fertilizer in agricultural countries like Nepal because of lack of domestic production.

a. Write the reaction principle for the production of urea from ammonium carbamate process. [2]

b. What are the advantages of urea over other fertilizer? [1]

c. Chemical industries are great contributor to the national economy. Explain. [2]

Group 'C'

[3×8= 24]

20. i. The knowledge of limiting reactant predicts the amount of product formed in the reaction.
 For a reaction, $\text{Ca(OH)}_2 + 2\text{NH}_4\text{Cl} \rightarrow \text{CaCl}_2 + 2\text{NH}_3 + 2\text{H}_2\text{O}$
 The reaction is carried out by mixing 7gm of pure Ca(OH)_2 and 7 gm of pure NH_4Cl .
- Find the limiting reactant.
 - Calculate the moles of unreacted reactant left over.
 - What mass of CaCl_2 will be formed?
 - What volumes of NH_3 gas are produced at 27°C and 1.5 atm pressure?
 - Find the number of H_2O molecules formed. [1+1+1+1+1]
- ii. Show that the molecular weight of a gas is twice its vapour density [3]
21. Oxyacid of nitrogen is HNO_3 which is also called Aqua Fortis and is obtained by catalytic oxidation of ammonia.
- Write the principle and flowsheet diagram for the manufacture of nitric acid by the catalytic oxidation of ammonia. [2+2]
 - Write the name of any two metals which can liberate H_2 gas from nitric acid. [1]
 - Why is conc. HNO_3 stored in dark bottle? [1]
 - What is the laboratory test for nitrate ion? Explain with reaction involved. [2]

OR

Oxides are binary compounds of oxygen with other elements except noble gases and noble metals (Au, Pt, and Pd).

- Classify the given oxides into their respective category: [3]
 K_2O , Al_2O_3 , NO , CO_2 , Fe_3O_4 , RbO_2
 - What happens when
 - Silent electric discharge is passed through pure and dry oxygen? [1]
 - Ozone is passed into KI and starch solution. [1]
 - Write any two allotropes of oxygen? [1]
 - What are chemical fertilizers? Give two examples. [1+1]
22. An alkene X undergoes ozonolysis gives single compound Y having formula CH_2O .
- Identify the compound X. [2]
 - How can you prepare compound X from chloroethane and ethanol? [1+1]
 - How can you prove that the compound X is unsaturated? [2]
 - How can you prepare X from Kolbe's electrolysis? [2]

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Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: C

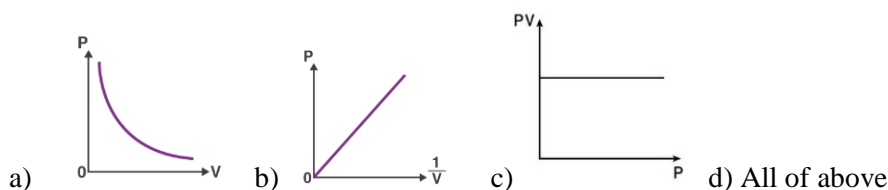
Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11×1=11]

1. Among the plots of P vs V as given below which one corresponds to Boyle's law?



2. One gram molecular weight of SO_2 containsmolecules.
 a) 6.023×10^{23} b) 6.022×10^{-23} c) 6.022×10^{23} d) 6.032×10^{23}
3. The correct sequence of electron affinity is

- a) $F > Cl > O > I$ b) $F > O > N > Br$ c) $Cl > F > Br > I$ d) $Br > I > Cl > F$
4. Which one is false?
 a) The sigma bond is stronger than the pi bond
 b) The carbon-carbon double bond is shorter than single bond
 c) The double bond contains the sigma bond and pi bond
 d) The covalent bond is weaker than the hydrogen bond.
5. $4P + 3NaOH + 3H_2O \longrightarrow 3NaH_2PO_2 + PH_3$
 Above reaction is
 a) oxidation reaction b) reduction reaction c) disproportionation reaction d) all of above
6. Charring of sugar by conc. H_2SO_4 is its:
 a) oxidizing action b) reducing action c) dehydrating action d) hydrating action
7. What is the biological role of Ca ion in non-enzymatic processes?
 a) Messenger for hormonal action b) Trigger for muscle contraction
 c) Preservation of nervous system d) Red blood cell formation
8. Silver metal can be extracted by
 a) hydrometallurgy b) pyrometallurgy c) electrometallurgy d) both (a) and (c)
9. A considerable part of the harmful ultraviolet radiation of the sun does not reach the surface of the earth. This is because high above the earth's atmosphere there is a layer of
 a) carbon dioxide b) hydrogen c) cloud d) ozone
10. The nitrogen content in urea is
 a) 26% b) 36% c) 46% d) 64%
11. The catalyst used for the manufacture of sulphuric acid is
 a) Mo/ Fe b) V_2O_5 c) FeS_2 d) P_2O_5

Group 'B'

[8 × 5 = 40]

12. An element (A) has 2 electrons in K shell, 8 electrons in L shell and 5 electrons in M shell.
 a) Identify the element (A) and write the number of protons and electrons in it.
 b) The size of A^{3+} ion is greater than that of (A) atom.
 c) Write down the formula of one of the compounds of (A) where (A) is in - 3 oxidation state.
 d) Write the four sets of quantum number of the electrons of M shell. [2+1+1+1]

OR

The first ionization energies of the second elements are given below :

Name of elements	Li	Be	B	C	N	O	F	Ne
First I.E.(KJ/mol)	520	899	801	1086	1403	1314	1681	2081

- a) Define ionization energy. [1]
- b) Which of the above element is most difficult to ionize? And why? [2]
- c) Why is there a steep rise in I.E. from carbon to nitrogen? [2]
13. If you are given the following redox reactions.
 $KMnO_4 + HCl \longrightarrow KCl + MnCl_2 + H_2O + Cl_2$
 a) Identify with electronic concept, which is oxidized and which is reduced. [1]
 b) Define the oxidant and reductant in terms of oxidation number. [1]
 c) Balance the given reaction either by oxidation number or ion-electron method. [2]
 d) Indicate the number of HCl molecules acting as an oxidizing and as an acidic agent. [1]
14. Thomas Graham observed the rate of diffusion of different gases under similar conditions of temperature and pressure and developed a law known as Graham's law of diffusion.
 a) State Graham's law of diffusion. [1]
 b) Derive the following relation by using this law. [2]
 $r_1/r_2 = t_2/t_1 = \sqrt{d_2/d_1} = \sqrt{M_2/M_1}$

- c) 250 ml of nitrogen maintained at 720 mm pressure and 380 ml of oxygen maintained at 650 mm pressure are put together in one litre flask. If the temperature is constant what will be the final pressure of the mixture? [2]

OR

Hydrazine (N_2H_4) has been used for many years as rocket fuel. The reactions that occur in hydrazine is as follows: $\text{NH}_2\text{-NH}_2(\text{g}) \rightleftharpoons \text{N}_2(\text{g}) + 2\text{H}_2(\text{g})$

- a) The decomposition of hydrazine occurs very rapidly in the combustion chamber of rocket. What may be the reason for this? [1]
- b) Write the expression for equilibrium constant (K_c) for the equation. [2]
- c) Describe the position of equilibrium in the above equation when
 i. temperature is increased ii. pressure is increased [2]
15. Carbon is known to exist in many allotropic forms.
 a) Define allotropy. [1]
 b) Write down the differences between diamond and graphite. [2]
 c) What happens when carbon monoxide is treated with nickel at 80°C [1]
 d) Why is CO gas harmful to us? [1]
16. Sodium is extracted from its economical and most accessible compound sodium chloride by the electric reduction process.
 a) point out the difficulties during the electrolysis. [1]
 b) how did J.C. Down overcome these difficulties? [1]
 c) write the principle and diagram for the extraction of sodium from Down's process. [3]
17. One of the examples of homologous series is given below.
 CH_3OH
 $\text{CH}_3\text{CH}_2\text{OH}$
 A
 $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$
 a) Define homologous series. [1]
 b) Find the mass difference between successive members of the above homologous series. Write the formula of 'A'. [2]
 c) Write the functional isomer of (A) and its IUPAC name. [2]
18. Electron displacement in a single covalent bond in an organic compound is called inductive effect (I effect) while in a pi bond is called resonance effect (R effect)
 a) Define inductive effect and resonance effect. [2]
 b) Justify based on I effect, chloroacetic acid is a stronger acid than acetic acid. [2]
 c) What type of group shows +I effect and -I effect? [1]
19. A mineral acid (A) has molecular mass 63 amu. It is used in the production of ammonium nitrate for fertilizers, making dyes etc.
 a) Write 3 steps of chemical equation for the manufacture of (A) by Ostwald's process. [1.5]
 b) Draw a flow sheet diagram for the manufacture of (A) by the process. [2]
 c) How would you perform laboratory test of nitrate ion present in its aqueous solution. [1.5]
- Group 'C'** **[3×8 = 24]**
20. 300 gm of 80% pure CaCO_3 is completely reacted with excess HCl to produce CaCl_2 , H_2O and CO_2 .
 a) Write the balanced chemical equation [1]
 b) Which one is limiting reagent and why? [2]
 c) Calculate the mass of CaCl_2 formed [1]
 d) How many moles of water are produced? [1]
 e) What volume of CO_2 is produced if the reaction is carried out at 25°C temperature at 780 mm Hg pressure? [3]

21. A mineral acid (A) which is also known as oil of vitriol has a molecular mass of 98 amu. This acid has a central atom of sulphur and having 4 oxygen atoms. It is a diprotic acid.
- Write four steps of chemical reaction for the manufacture of (A) by contact process. [2]
 - Write the chemical reaction in which (A) acts as dehydrating agent, precipitating agent and oxidizing agent. [3]
 - Give the test of sulphate ion in its aqueous solution. [1]
 - How can you show that bleaching action of SO_2 . [2]

OR

Urea is much demanded fertilizer in agricultural country like Nepal. One of the raw materials for manufacture of urea is ammonia.

- Write a step wise reaction and draw a flow sheet diagram for the manufacture of urea [2]
 - What happens when mercurous nitrate paper is placed over a jar containing ammonia gas? [2]
 - Why is ammonia highly soluble in water? [1]
 - What happens when excess ammonia is treated with Copper sulphate solution? [2]
 - Why ammonia turns phenolphthalein solution into pink? [1]
22. Compound (A) is heated with silver powder to give compound (B). Compound (B) on passing into red hot iron tube at 500°C produces compound (C) of molecular formula C_6H_6 .
- Identify compound (A) and (B) with IUPAC name. [2]
 - Write a chemical reaction to confirm the acidic nature of compound (B). [2]
 - What happens when compound(C) is nitrated at different temperatures? [2]
 - What is decarboxylation reaction? Give an example. [2]

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Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: D

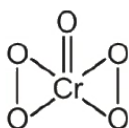
Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

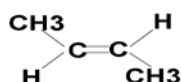
[11×1=11]

- The atom having the valence shell configuration $4s^2 4p^5$ would be in
 - group VI A and period 5
 - group IV B and period 4
 - group VI B and period 7
 - group VII A and period 4
- Which of the following bonding is responsible for the solubility of ammonia gas in water?
 - Hydrogen bonding
 - Ionic bonding
 - Co-valent bonding
 - Metallic bonding
- Avogadro's number is denoted by
 - N_A
 - n_a
 - N_a
 - n_A
- The energy of electron ----- if electron jumps from lower orbit to higher orbit
 - increases
 - decreases
 - emains constant
 - first increases then decreases
- Oxidation number of Cr in CrO_5



- +10
 - +6
 - 6
 - +5
- What happens when sulphur dioxide gas is passed through hydrosulphide gas?
 - SO_2 is oxidized to sulphur
 - H_2S is reduced to sulphur
 - SO_2 is oxidized to H_2SO_4
 - SO_2 is reduced to sulphur
 - Sodium-glucose pump is an example of
 - primary active transport protein
 - secondary active transport protein

15. Hydrogen is the first element in the periodic table and is also the lightest element known.
- What is meant by nascent hydrogen? [1]
 - Give two chemical reactions to show nascent hydrogen is strong reducing agent than molecular hydrogen. [2]
 - What happens when hydrogen gas and chlorine combine in the presence of sunlight? [1]
 - Write one use of hydrogen fuel cell. [1]
16. In Nepal, fairly good amounts of different types of minerals have been reported. Nepal may become a major supplier of these metals if their proper execution is made.
- Write the molecular formula of two important ore of metal. [2]
 - What is meant by flux and slag? Write one example of ferrous alloy. [2]
 - Which type of metal can be purified by electrolytic method? [1]
17. For the detection of foreign elements in organic compounds, sodium extract or Lassaigne's extract should be prepared.
- Why is it necessary to prepare? [2]
 - Why is it alkaline in nature? [1]
 - Write the IUPAC name and common name of CH_3CONH_2 and mention the foreign element present in it. [2]
18. The structure of the compound is given as:



- Can the above compound show a geometrical isomer? Give reason. [1.5]
 - Show the cis and trans-isomers. [1]
 - When the compound reacts with HBr to give compound (A) which is heated with sodium metal in dry ether to give compound (B). Write the reaction involved and write the name of the reaction to convert (B) from compound (A). [2+0.5]
19. Sodium carbonate is manufactured by the Solvay or ammonia soda process.
- Write the basic principle involved in the manufacture of sodium carbonate from Solvay's process. [2]
 - Draw the flow sheet diagram for the manufacture of sodium carbonate. [2]
 - Define the term brine solution Why is NaHCO_3 less soluble in spent brine (NaCl). [1]

Group 'C'

[3×8 = 24]

20. Calcium carbonate is decomposed by HCl as given below:
 $\text{CaCO}_3 + 2\text{HCl} \longrightarrow \text{CaCl}_2 + \text{H}_2\text{O} + \text{CO}_2$
- Calculate the mass of water produced by the reaction of 4 moles of CaCO_3 with 4 moles of HCl. [2]
 - Find a limiting reagent. What is the importance of limiting reagents in chemical reactions? [2]
 - If 2 moles of CaCO_3 produce 40 litres of CO_2 at STP with excess HCl. What is the percentage yield of the reaction? [2]
 - If 250 gm of CaCO_3 upon reaction with excess HCl gives 222gm of CaCl_2 . What is the percentage purity of CaCO_3 . [2]
21. Sulphuric acid is versatile compound, so it can produce SO_2 , H_2S etc and also called king of chemical.
- Starting from sulphur, how would you prepare sulphuric acid? [2]
 - How would you show that sulphuric acid acts as dehydrating agent? [1.5]
 - What gas will be obtained by heating copper turning with conc. H_2SO_4 ? [1.5]
 - Compare the bleaching action of the gas with chlorine. [3]

OR

Oxygen is the third most abundant element by mass which readily forms oxides with other elements. Some of the oxides are given below.

Na_2O	Al_2O_3	CO	CO_2	Fe_3O_4	H_2O_2
-----------------------	-------------------------	-------------	---------------	-------------------------	------------------------

- Identify the acidic oxide, basic oxide, neutral oxide and mixed oxide from the above table. [3]
- Write two chemical equations to prove that the particular oxide is amphoteric in nature. [2]

- c) Which one of the above oxides combined with ammonia to obtain urea. Draw the flow sheet diagram of the manufacture of urea. [0.5+2.5]
22. An alkene (X) undergoes ozonolysis gives two compounds (Y) having formula C_2H_4O and (Z) having CH_2O .
- What happens when hydrogen bromide is added to the compound (X)? [2]
 - The product obtained is heated with sodium metal in dry ether to give compound (A). Write the reaction involved. [2]
 - How can you prove chemically the compound (X) is unsaturated? [2]
 - Write the chemical test to distinguish ethyne from ethene. [2]

Send - Up Examination – 2082

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet

[11×1=11]

- Which of the following element can form both cation and anion?
 - Na
 - F
 - H
 - Fe
- What is the volume of HCL gas when 1 mole of hydrogen and 1 mole of chlorine gases at NTP react?
 - 22.4L
 - 11.2 L
 - 44.8L
 - 5.6L
- Which of the following compound contains ionic, covalent and coordinate covalent bonds?
 - HNO_3
 - Na_2CO_3
 - K_2SO_4
 - HIO_3
- Which set of quantum number is wrong?
 - $n = 2, l = 1, m = 0, s = +1/2$
 - $n = 2, l = 1, m = -1, s = +1/2$
 - $n = 3, l = 1, m = +1, s = -1/2$
 - $n = 2, l = 2, m = -1, s = -1/2$
- Which of the following statement about gases is false?
 - When pressure is given gases compress.
 - Gases have large intermolecular spaces.
 - On increasing temperature, volume of gases decrease.
 - The force of gravitation on gas molecules is negligible.
- An intermediate compound X is formed during the production of urea through Ammonia/Carbon dioxide technology. What is the molecular formula of X?
 - NH_2COONH_2
 - NH_2COONH_4
 - NH_4COONH_2
 - NH_4COONH_4
- Which is the correct order of nitrates of alkaline earth metal carbonates?**
 - $Mg(NO_3)_2 > Ca(NO_3)_2 > Sr(NO_3)_2 > Ba(NO_3)_2$
 - $Mg(NO_3)_2 < Ca(NO_3)_2 < Sr(NO_3)_2 < Ba(NO_3)_2$
 - $Mg(NO_3)_2 > Ba(NO_3)_2 > Ca(NO_3)_2 > Sr(NO_3)_2$
 - $Mg(NO_3)_2 > Sr(NO_3)_2 < Ca(NO_3)_2 > Ba(NO_3)_2$
- In which of the following stage of cash flow in the production life cycle there is profit peak?
 - Introduction
 - Maturity
 - Growth
 - Decline
- Intake of which of the following metal ion causes autism?
 - Hg^+
 - Pb^{++}
 - Cd^{++}
 - Fe^{2+}
- Which of the following organic compound is acidic in nature?
 - Propene
 - Ethene
 - Ethane
 - Ethyne
- Which of the following are recycled in the manufacture of washing soda by Solvay's process?
 - CO_2 and NH_4Cl
 - NH_3 and $CaCl_2$
 - CO_2 and NH_3
 - $NaCl$ and CO_2

Group 'B'

[8×5= 40]

b. An atom has the following electronic configuration.

Orbit	1	2	3	4
No. of electrons	2	8	8	1

- e. Write the name of the element involved and its electronic configuration.
 f. Calculate the number of s and p electrons
 g. Calculate the total number of orbits and orbitals
 h. Write the set of all 4 quantum numbers of the valence electron.

[1+1+1+2]

OR

Sodium and potassium are both Group 1 elements, and so both have one valence electron.

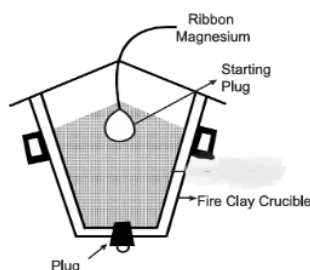
- a. Although sodium and potassium are Group 1 elements, they have different first ionization energies. Why? [2]
 b. Na^+ and Mg^{+2} have the same number of electrons, which ion would you expect to have the smaller size? Explain. [2]
 c. What is meant by an isolated gaseous atom? [1]
 13. a. Balance the following chemical equation by oxidation number method or ion-electron method.

$$\text{K}_2\text{Cr}_2\text{O}_7 + \text{KCl} + \text{H}_2\text{SO}_4 \longrightarrow \text{K}_2\text{SO}_4 + \text{Cr}_2(\text{SO}_4)_3 + \text{H}_2\text{O} + \text{Cl}_2$$
 [3]
 b. How many coulombs are required to convert 1 mole of $\text{Cr}_2\text{O}_7^{2-}$ to Cr^{3+} ? [2]
 14. 2.4 g of magnesium is treated with 0.2 mole of sulphuric acid to yield MgSO_4 and H_2 .
 i. Which one is the limiting reactant and why?
 ii. Calculate the mass of excess reactant.
 iii. How many moles of MgSO_4 are produced?
 iv. What mass of water will be produced if the whole H_2 gas formed in the reaction reacts with O_2 ?

OR

A chemical bond is the attractive force that holds two or more atoms together in a molecule.

- d. Differentiate intermolecular and intramolecular hydrogen bonds with an example. [2]
 e. The geometry of NH_3 and BF_3 molecules is different. Why? [2]
 f. Draw the Lewis dot structure of H_2SO_4 . [1]
 15. a. The roasted or calcined ore is converted to the free metal by reduction.
 i. What is the name of the process shown in the figure? [1]



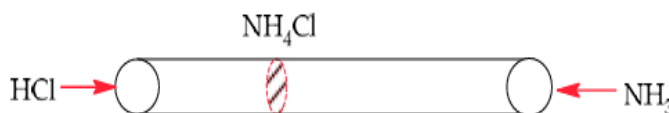
- ii. Why is Al used as a reducing agent but not carbon for the extraction of Cr and Mn from their respective oxides? [2]
 b. Define acidic and basic flux with examples. [2]
 16. Oxygen is the most abundant element in the Earth's crust, accounting for about 41% of its mass. Oxygen, being highly reactive, directly combines with all the elements except the noble metals to form oxides.
 a. Classify the given oxides into their respective category: [3]
- | | | | | | |
|-------------------------|----------------|---------------|--------------|-------------|-------------------------|
| Al_2O_3 | BaO_2 | NO_2 | CaO | CO | Fe_3O_4 |
|-------------------------|----------------|---------------|--------------|-------------|-------------------------|
- b. Mention the main cause of ozone layer depletion. [1]
 c. Write any one reaction to show that nascent hydrogen is powerful reducing agent than molecular hydrogen. [1]

17. In a large scale, ammonia is prepared by Haber's process. This process is the most common method for the synthesis of ammonia. [1+2+1+1]
- Write down any one reaction which shows the reducing nature of ammonia.
 - What happens when NH_3 is treated with copper sulphate solution?
 - Why does NH_3 turn mercurous nitrate paper black?
 - What is the passivity of iron?
18. Urea is the most common chemical fertilizer used in Nepal. Name the foreign element present in urea. What is the composition of the sodium extract if that element is present in the given organic compound? How would you detect that element by Lassaigne's test? Mention the procedure with a relevant reaction. [1+1+3]
19. An alkyl halide(X) on dehydrohalogenation yields an alkene(Y). The alkene(Y) on ozonolysis gives a mixture of ethanal and methanal. Identify compounds X and Y. Give their IUPAC name with their necessary reaction. How would you prove chemically that the compound Y is unsaturated? [2+2+1]

Group 'C'

[3×8= 24]

20. a. State and explain Graham's law of diffusion. [3]
- b. Ammonia and sulphur dioxide gases are prepared in two corners of a laboratory. Which gas will be detected first by a student working in the middle of the laboratory, and why? [2]
- c. Through the two ends of a glass tube of length 2 meters, hydrogen chloride (HCl) and ammonia (NH_3) gases are allowed to enter. At what distance will ammonium chloride will from NH_3 end? [3]



21. Sulphuric acid is an important chemical widely used from research laboratory to industrial application. The consumption rate of sulphuric acid shows the level of industrial development of the country and hence the prosperity.
- Describe the manufacture of Sulphuric acid by the contact process, including the principle and reaction involved. [4]
 - Draw the flowsheet diagram for the manufacture of urea. [2]
 - Why is the contact process named so? [1]
 - In which fertilizer does Thomas slag belong to? Why? [1]

OR

Sodium hydroxide is an important alkali used in industries as well as in laboratories. It is commercially produced on a large scale by electrolysis of brine solution. Diaphragm cell is one of the electrolytic cells used in the manufacture of sodium hydroxide.

- Describe the manufacture of sodium hydroxide by the diaphragm cell, including the principle and reactions involved. [3]
 - Draw the flowsheet diagram of the manufacture of sodium hydroxide by the diaphragm cell. [2]
 - Which fertilizer helps in the ripening of fruits? Write any two examples of this fertilizer. [1+1]
 - Define mixed fertilizer. [1]
22. The phenomenon of the existence of compounds having the same molecular formula but different properties is known as isomerism.
- Draw structural isomers of a compound having a molecular formula C_6H_{14} and give their IUPAC name. [2]
 - When propyne is heated with water in the presence of dil. Sulphuric acid and mercuric acid produce an enol form, which on tautomerism gives a compound (A). Identify the compound A with the related reaction. Write the functional isomer of compound (A). [2+1]
 - What is Friedel-Craft's alkylation? Give an example. [1]

Send - Up Examination – 2082

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet

[11×1=11]

1. The percentage composition of Sulphur in magnesium sulphate is
 a. 20% b. 26.67% c. 43.33% d. 52.94%
2. The mass of one molecule of oxygen is
 a. 5.314×10^{-23} g b. 6.02×10^{-23} g c. 5.33×10^{23} g d. 6.02×10^{23} g
3. Atomic spectrum of hydrogen falling in the visible region is
 a. Lyman series b. Paschen series c. Balmer series d. P-funds series
4. In propene there are
 a. eight sigma bonds and one pi bond b. seven sigma bonds and two pi bonds
 c. six sigma bonds and three pi bonds d. one sigma bond and seven pi bonds
5. Which of the following statement is correct?
 a. With the rise in temperature, surface tension increases
 b. With the decrease in temperature, surface tension remains same
 c. With the decrease in temperature, surface tension decreases
 d. With the rise in temperature, surface tension decreases
6. The ozone layer in the stratosphere is depleted by
 c. SO₂ b. CO₂ c. Freons d. N₂
7. In Haber's process, ammonia is prepared at
 a. high temperature and high pressure b. low temperature and high pressure
 c. high temperature and low pressure d. low temperature and low pressure
8. Diamond is a
 a. metallic crystal b. electrovalent crystal c. ionic crystal d. covalent crystal
9. Excess of Na⁺ ions in human body causes
 a. anaemia b. high blood pressure c. diabetes d. low blood pressure
10. MgSO₄, 7H₂O is also known as
 a. Plaster of Paris b. Epsom Salt c. Bleaching powderd. Magnesia
11. Nitric acid is manufactured by
 a. Haber's Process b. Contact Process c. Ostwald's Process d. Solvay Process

Group 'B'

[8×5= 40]

12. An atom has the following electronic configuration.

Shell	K	L	M
No. of electrons	2	8	3

- a. Write the name of the element involved and its electronic configuration.
- b. Calculate the number of s and p electrons
- c. Calculate the total number of orbits and orbitals
- d. Write the set of all 4 quantum numbers of the valence electron.

[1+1+1+2]

OR

The larger value of electron affinity indicates the greater tendency of an atom to accept an electron.

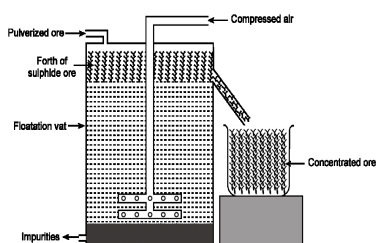
Elements	Li	Be	B	C	N	O	F	Ne
EA(kJ/mol)	-59.8	0	-23.0	-122	-20.1	-140.9	-327.9	0

- Define electron affinity. [1]
 - Why do Be and Ne have zero electron affinity? [2]
 - Halogen has the highest affinity in the period. Why? [2]
13. a. Balance the following chemical equation using the oxidation number method or the ion-electron method. [3]
- $$\text{KMnO}_4 + \text{KCl} + \text{H}_2\text{SO}_4 \longrightarrow \text{K}_2\text{SO}_4 + \text{MnSO}_4 + \text{H}_2\text{O} + \text{Cl}_2$$
- Prove that: $1\text{F} = 96500$ coulombs [2]
14. A chemical reaction was carried out by mixing 25 g of pure CaCO_3 and 0.75 mol of pure HCl to give CaCl_2 , H_2O and CO_2 .
- Which one is the limiting reactant?
 - Calculate the mass of CaCl_2 formed.
 - Calculate the number of water molecules produced.
 - What mass of NaOH is required to absorb the whole mass of CO_2 produced in the reaction? [1+1+1+2]

OR

All hybrid orbitals of a particular kind have equal energy, identical shape and are symmetrical in orientation.

- Write any four differences between sigma and pi-bond. [2]
 - The geometry of H_2O and H_2S molecules is different. Why? [2]
 - Draw the Lewis dot structure of HNO_3 . [1]
15. a. The removal of impurities from the pulverized ore is called concentration of ore. [1]
- What is the name of the process shown in the figure? [1]



- Which type of ore can be concentrated by this process? Give an example [1]
 - Why is pine oil added in this process? [1]
- Write the difference between calcination and roasting. [2]
16. Sulphuric acid is one of the most important chemicals produced in the chemical industry. In the early days, sulphuric acid used to be manufactured by the lead chamber process. Now, this process is obsolete. These days, sulphuric acid is manufactured by the contact process. [1+2+2]
- What do you mean by charring of sugar?
 - Write any one reaction in which H_2SO_4 acts as:
 - Dehydrating agent
 - Oxidizing nature
 - Differentiate between the bleaching action of Cl_2 and SO_2 .
17. Oxides are binary compounds of oxygen with another element except noble gases and noble metals. Some examples are:
- | | | | | | |
|-----|----|-----|-----|------------------|--------------------------------|
| ZnO | CO | MgO | CaO | CSO ₂ | Pb ₃ O ₄ |
|-----|----|-----|-----|------------------|--------------------------------|
- Classify the above oxides. [3]
 - How does CFC deplete the ozone layer? [2]
18. Lassaigne's extract test is an important test used to detect the presence of a hetero element present in an organic compound. Explain why:

- a. Lassaigne's extract is alkaline in nature.
 b. Sodium extract is boiled with conc. Nitric acid while testing for halogens. [2+3]
19. An organic compound 'A' was used in anesthesia when it is heated with silver powder yields compound 'B', which, on passing through an iron tube, produces an aromatic compound C_6H_6 [C]. Identify A, B and C with the reaction. Write the characteristics of aromatic compounds. [3+2]

Group 'C' [3×8= 24]

20. a. Derive: $PV=nRT$ [2]
 b. State Graham's law of diffusion. [1]
 c. Distinguish between an ideal gas and a real gas. [1]
 d. Why do gases deviate from their ideal behavior at low temperature and high pressure? [1]
 e. A spherical balloon of 21 cm diameter is to be filled with hydrogen gas at NTP from a cylinder containing hydrogen gas at 20 atm and 27°C. If the cylinder can hold 2.82 litres of water, calculate the number of balloons that can be filled. [3]
21. Originally, Nitric acid was manufactured from sparked N_2 and O_2 in Birkeland- Eyde process. Nowadays, nitric acid is manufactured by Ostwald's process.
 a. Describe the manufacture of nitric acid by Ostwald's process with a flowsheet diagram. [4]
 b. What do you mean by potash fertilizer? Give any two examples of it. [2]
 c. Which nitrogenous fertilizer has the highest nitrogen content? Mention the raw materials required for the production of this nitrogenous fertilizer. [1+1]

OR

The Solvay process or ammonia soda process is the major industrial process for the production of sodium carbonate. The ammonia soda process was developed into its modern form by the Belgian chemist Ernest Solvay during the 1890s.

- a. Describe the manufacture of sodium carbonate by the Solvay process. [2.5]
 b. Draw the flowsheet diagram of the Solvay process. [3]
 c. Define phosphorus fertilizer with one example. [1.5]
 d. Mention the raw material required for the production of carbamide. [1]
22. Wurtz reaction is an important method for the preparation of symmetrical alkane. Why is this reaction not suitable for the preparation of an alkane having an odd no. of carbon atoms? How would you prepare ethane from methane? What happens when:
 a. Bromoethane is heated with sodium metal in the presence of dry ether.
 b. Sodium acetate is heated with soda-lime.
 c. 2-bromopropane is heated with alc. KOH.
 d. Ethyne(acetylene) gas is passed through an ammonical solution of silver nitrate.
 e. Ethene is passed through bromine solution. [3+1+1+1+1+1]

NEB-Model Questions – 2078

Time: 3 hrs.

F.M.: 75

P.M.: 27

Attempt all questions

Group 'A'

Rewrite the correct option of each question in your answer sheet. [11×1=11]

- 1) How many atoms are there in two molecules of water?
 a. 3 b. 4 c. 5 d. 6
- 2) What is the number of moles of ammonia gas formed when 0.5 mole of nitrogen gas is reacted with excess of hydrogen gas?
 a. 0.5 b. 1 c. 2 d. 3
- 3) Which of the following bonding is responsible for the solubility of ammonia gas in water?
 a. Hydrogen bonding b. Ionic bonding c. Covalent bonding d. Van der Waals' force

- 4) What happens when Sulphur dioxide (SO₂) gas is passed through an acidified solution of hydrogen sulfide (H₂S) gas?
- a. SO₂ is oxidized to Sulphur b. H₂S is reduced to Sulphur
c. SO₂ is oxidized to H₂SO₄ d. SO₂ is reduced to Sulphur
- 5) Which of the following property of crystalline substance describes the similar chemical composition?
- a. Isotopism b. Isotopism c. Allotropism d. Isomorphism
- 6) SO₃ gas is formed as an intermediate during the manufacture of Sulphuric acid by contact process. The formation of Sulphur trioxide from sulfur dioxide and oxygen is reversible.
- $$2\text{SO}_2 + \text{O}_2 \rightleftharpoons 2\text{SO}_3 \Delta H = -196 \text{ kJ mol}^{-1}$$
- Which conditions of pressure and temperature favor the reverse reaction?
- a. High pressure and high temperature b. High pressure and low temperature
c. Low pressure and high temperature d. Low pressure and low temperature
- 7) Which is the correct order of ease of carbon dioxide production by heating the Group II metal carbonates?
- a. MgCO₃>BeCO₃>CaCO₃>RaCO₃ b. CaCO₃>MgCO₃>BeCO₃>RaCO₃
c. BeCO₃>MgCO₃>CaCO₃>BaCO₃ d. BeCO₃<MgCO₃<CaCO₃<RaCO₃
- 8) Which of the following is related to Batch process?
- a. Requires high- cost equipment b. Can -not be controlled easily
c. Generally available in fully automated plant d. Involves sequence of steps followed in specific order
- 9) Sodium-glucose pump is an example of
- a. Primary active transport protein b. Secondary active transport protein
c. Primary passive transport protein d. Secondary passive transport protein
- 10) An intermediate compound X is formed during the production of urea through *ammonia/carbon dioxide* technology. What is the molecular formula of X?
- a. NH₂COONH₂ b. NH₂COONH₄ c. NH₄COONH₂ d. NH₄COONH₄
- 11) Which of the following are recycled in the manufacture of sodium Carbonate by Solvay's process?
- a. CO₂ and NH₄Cl b. CO₂ and NH₃ c. NaCl and CaO d. NaCl and NH₃

Group 'B'

Give short answer to the following questions.

(8 × 5=40)

- 12) An element X has 2 electrons in K shell, 8 electrons in L shell and 5 electrons in M shell.
- a) Identify the element X and write the number of protons and electrons in it. [3]
b) Size of X³⁺ ion is greater than that of X atom though both contain the same number of protons. Give reason. [1]
c) Write down the formula of one of the compounds of X where X is in -3 oxidation state. [1]

OR

Know how to about ionization energy (IE) of elements is crucial aspect in the study of chemical bonding whether they form ionic or covalent bond. The first ionization energies of period second elements are given below:

Name of elements	520	899	801	1086	1403	14100	681	2080
First ionization energy(kJ/mol)								

- i) Define first ionization energy. [1]
ii) Name a factor that affects the value of IE. [1]
iii) Which of the element is most difficult to ionize? [1]
iv) Why is there steep rise in IE from carbon to nitrogen? [2]
- 13) When electricity is passed through the molten NaCl in the presence of CaCl₂ in the ration of 2:3 by weight using graphite anode and iron cathode as electrodes, sodium metal is deposited at cathode and chlorine gas is liberated at anode in the electrolytic cell
- a) Define electrolytic cell. [1]

- b) Find the mass of sodium metal deposited at cathode when 0.1 ampere of current is passed for half an hour and the process has 75% efficiency. [2]
- c) Why does calcium metal not deposit instead of sodium at the cathode? [1]
- d) Aqueous solution of sodium chloride cannot be used instead of molten sodium chloride for the same intended product? Give reason. [1]
- 14) Derive the relationship between K_p and K_c . Give one example of chemical reaction where K_p is greater than K_c . [4+1]

OR

Derive the ideal gas equation $PV=nRT$ where the symbols have their usual meaning. State two conditions under which behavior of real gas approaches that of an ideal gas. [3+2]

- 15) Concentrated sulphuric acid can be used in the laboratory to produce hydrogen chloride gas by the reaction with solid sodium chloride.
- a) Hydrogen iodide is not produced by the same method as for hydrogen chloride. Why? [1]
- b) What is the difference between hydrogen chloride gas and hydrochloric acid? [2]
- c) How could you identify the bottle containing HCl using ammonia gas? [2]
- 16) Depending upon the nature of minerals present in the ores, calcination and roasting are mainly used for the conversion of ores into their respective oxides.
- a) What do you mean by roasting and calcination in the metallurgical process? [2]
- b) Name the vessel in which roasting is carried out [1]
- c) Write the name of two possible impurities that are removed in the roasting [2]
- 17) One of the examples of homologous series is given below.
- CH₃OH
 CH₃CH₂OH
 X
 CH₃CH₂CH₂CH₂OH
- a) Define homologous series. [1]
- b) Find the mass difference between successive member of above homologous series and calculate the molecular mass of X. [2]
- c) What is the reason behind the highest boiling point but least solubility of the fourth member in the given series? [2]
- 18) An unsaturated hydrocarbon **B** upon treatment with Hydrogen bromide produces compound **C**. Compound **C** reacts with sodium metal in the presence of organic ether produces compound **D** of molecular formula C₆H₁₄.
- a) Give the chemical equations for the conversion of compound **B** to compound **C** and compound **C** to compound **D**. [2]
- b) Write down the IUPAC name of compound **C** and **D**. [2]
- c) Give the structural formula of positional isomer of compound **C**. [1]
- 19) Urea is a very much demanded chemical fertilizer in agricultural country like Nepal because of the lack of domestic production. One of the raw materials for urea production is ammonia which is obtained from Haber's process.
- a) Draw a flow sheet diagram for the manufacture of Ammonia by Haber's-Bosch Process [3]
- b) What is the major challenge in establishing chemical industries in the countries like Nepal? Mention how such challenge can be strategically overcome? [2]

Group 'C'

Give long answer to the following questions **(3× 8=24)**

- 20) In the presence of platinum catalyst ammonia is oxidized to nitric oxide. The reaction is given below.
- $$4\text{NH}_3 + 5\text{O}_2 \rightarrow 4\text{NO} + 6\text{H}_2\text{O}$$
- a) Calculate the mass of Nitric oxide produced by the reaction of 2 mole of ammonia with 2 moles of oxygen. [2]
- b) What is the importance of limiting reactant in chemical calculation? [1]
- c) If 2 moles of ammonia produce 50 grams of water upon reaction with excess of O₂. What is the percentage yield of the reaction? [2]
- d) Calculate the volume of HCl gas required at 20°C and 750mm Hg pressure which can completely react with 2 mole of ammonia gas to produce ammonium chloride. [3]

21) Oxygen is the third most abundant element by mass which readily forms oxides with other elements. Some of the oxides are given below

Na_2O , Al_2O_3 , CO , SO_2 , Fe_3O_4 , H_2O_2

- Identify the acidic oxide, basic oxide, neutral oxide and mixed oxide from the above table. [4]
- Write two chemical equations to prove that the particular oxide is amphoteric in nature. [2]
- Why is CO a harmful gas? [1]
- Write any one industrial applications of oxygen gas. [1]

OR

Sulfuric acid is one of the largest volumes of industrial chemical produced in the world. Over the last decades the contact process has been used to produce sulfuric acid, replacing the traditional (Lead Chamber) process.

- Write the four steps of chemical equation for the manufacturing of sulphuric acid by contact process starting from iron sulfide. [4]
 - Give any two chemical equations in which sulphuric acid acts as precipitant and dehydrating agent. [2]
 - Write the chemical equation producing fertilizer using H_2SO_4 . [1]
 - Why does H_2SO_4 always act as an oxidizing agent? [1]
- 22) An alkene X undergoes ozonolysis and gives two compounds Y and Z of molecular formula $\text{C}_3\text{H}_6\text{O}$. Y and Z are functional isomers of each other.
- Write the two-steps chemical equation for the conversion of X into Y and Z. [2]
 - Write the structural formula of Y and Z. Why are they called functional isomers? [3]
 - What happens when hydrogen gas in the presence of nickel catalyst is passed over X? [1]
 - What is the application of ozonolysis in the organic reaction mechanism? [1]
 - How can you prove chemically the compound X is unsaturated? [1]

NEB Examination - 2078

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

1. Which has no effect on volume change?

- a) $\text{PCl}_5 \rightleftharpoons \text{PCl}_3 + \text{Cl}_2$ b) $\text{H}_2 + \text{CO}_2 \rightleftharpoons \text{H}_2\text{O} + \text{CO}$
c) $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$ d) $2\text{H}_2 + \text{O}_2 \rightleftharpoons 2\text{H}_2\text{O}$

2. The number of molecules in 4.25 gram of ammonia is approximately:

- a) 1×10^{23} b) 1.5×10^{23} c) 2.0×10^{23} d) 2.5×10^{23}

3. In the reaction, $2\text{H}_2\text{S} + \text{SO}_2 \longrightarrow 3\text{S} + 2\text{H}_2\text{O}$, H_2S is a

- a) reducing agent b) oxidizing agent c) precipitating agent d) base

4. Tritium is a radioactive isotope of hydrogen. It emits

- a) neutrons b) α - particles c) β - particles d) γ - particles

5. Real gases will approach the behavior of ideal gas at:

- a) low T, low P b) low T, high P c) high T, high P d) high T, low P

6. Dipole moment of BeF_2 is

- a) very low b) very high c) zero d) not definite

7. The correct order of decreasing second ionization potential of C, H, O & F is:

- a) $\text{C} > \text{N} > \text{O} > \text{F}$ b) $\text{O} > \text{N} > \text{F} > \text{C}$ c) $\text{O} > \text{F} > \text{N} > \text{C}$ d) $\text{F} > \text{O} > \text{H} > \text{C}$

8. Sulphur trioxide is absorbed by in the contact process
 a) water b) dil sulphuric acid c) conc. sulphuric acid d) alcohol
9. Hydrogen bonding is not present in:
 a) Glycerol b) Water c) Hydrogen Sulphide d) Hydrogen Fluoride
10. Optical isomers which are non-super imposable mirror images of each other are called:
 a) enantiomers b) geometrical isomers c) chain isomers d) position
11. Which of the following compounds has delocalized electrons?
 a) Methane b) Ethane c) Cyclohexane d) Benzene

Group 'B'

Give short answer to the following questions.

(8 × 5=40)

12. You have the composition of the following compounds.

H₂S; S = 94.11% & H = 5.89%

SO₂ ; S = 50% & O = 50%

H₂O; H = 11.11% & O = 88.89 %

- a) State the law of reciprocal proportion. 1
- b) Illustrate the law according to above composition. 3
- c) Give their ratio. 1

Or

The following reaction between hydrogen & chlorine atoms can be explained on the basis of Avogadro's law.

Hydrogen + Chlorine \longrightarrow Hydrochloric acid

- a) State Avogadro's law. 1
- b) Show that hydrogen & Chlorine are diatomic gas. 2
- c) 1 mole of chlorine molecule =molecules of chlorine =gm 1
- d) Calculate the vapour density of Cl₂. 1
13. A chemical reaction was carried out by mixing 25 gm of pure calcium carbonate and 0.75 mole of pure hydrochloric acid to give CaCl₂, H₂O & CO₂.
- a) Which one is limiting reactant? Why? 1
- b) Calculate the mass of CaCl₂ produced. 1
- c) How many numbers of water molecules are formed? 1
- d) What mass of NaOH is required to absorb the whole CO₂ produced in the reaction? 2
14. For general gaseous reaction
- a. $A + bB \longrightarrow cC + dD$
- a) Derive law of mass action. 2
- b) Derive the relationship between K_P& K_C. 3

Or

Diffusion is the phenomenon of intermixing of gases with each other. In an experiment, 20 ml of H₂ gas diffuse in 30 seconds, based on this data

- a) What volume of CO₂ would diffuse in the same time under the same condition? [Ans : 4.26 L] 2
- b) Name the gaseous law it follows& state it. 1
- c) Let us consider two gases A and B are intermixing each other. Express the law in terms of molecular weight. 2
15. Concentrated sulphuric acid can be used in the laboratory to produce hydrogen chloride gas by the reaction with sodium chloride.
- a) Why Hydrogen bromide cannot be produced by above method? 1
- b) Write complete reaction involved in above given statement. 1
- c) How would you identify the bottle containing HCl by using silver nitrate solution? 2
- d) What happens when a mixture of HCl gas & air is passed over heated cuprous chloride? 1
16. About 83% of the Nepalese territory is mountainous. Especially, the mountainous region of Nepal is enriched with several mineral deposits. So, study of extraction of metals is very important in context of Nepal.
- a) Differentiate between pyrometallurgy & electrometallurgy. 2

- b) Define gangue & slag. 2
- c) What do you mean by calcination? 1
- 17. Urea is a fertilizer which helps in rapid growth of plant & increases the yield**
- a) Write the formula of urea. 1
- b) Detect which foreign element is present in urea with necessary reaction. 2
- c) Urea is a synthetic fertilizer. How can you synthesize urea in the factories? 2
- 18. An alkyl halide C_3H_7Cl (A) is heated with alcoholic solution of KOH to give unsaturated hydrocarbon (B) which on ozonolysis to give the compound (C) & (D).**
- a) Write the formula of unsaturated hydrocarbon (B). 1
- b) Give the chemical equation for the conversion of compound (B) to compound (C) & (D). 2
- c) Write the IUPAC name of compound (A) and compound (B). 1
- d) What product is obtained when compound (A) is heated with sodium metal in the presence of dry ether? 1
- 19. In modern periodic table, metals are kept towards left side & non-metals towards right. Many defects of Mendeleev's periodic table are overcome by modern periodic table.**
- a) Why do metals form cation & non-metals form anion? 2
- b) Why is the electron affinity of oxygen higher than nitrogen? 2
- c) Define ionization energy. 1

Group 'C'

Give long answer to the following questions.

(3×8=24)

- 20. Kipp's apparatus provides intermittent supply of H_2S gas by the reaction of iron sulphide and dilute sulphuric acid.**
- a) The gas is passed into $FeCl_3$ solution. Give the complete equation. 1
- b) In the above reaction (a), mention reducing agent and oxidizing agent. 1
- c) Balance the equation in terms of oxidation number. 3
- d) Define oxidation number. 1
- e) Write the Lewis structure and the shape of H_2S molecule predicted by VSEPR theory. 2
- 21. Wilhelm Ostwald in 1902 established the method of production of nitric acid.**
- a) For the production of nitric acid, prepare ammonia by Haber's synthesis. 4
- b) Mention the conditions to maintain high yield of ammonia according to Le - Chatelier's principle. 2
- c) Write the complete reactions involved for the production of nitric acid by the catalytic oxidation of ammonia. 2

Or

Oxides are compounds which usually contain oxygen combined with one other element. Oxides are classified as follows: Acidic, amphoteric & basic.

- a) Using these terms only complete the table to describe the oxides of the elements of the third period of the periodic table Sodium to Sulphur. 3

Na_2O	MgO	Al_2O_3	SiO_2	P_4O_{10}	SO_2	Cl_2O_7
						acidic

- b) Give the name of two elements from Sodium to Chlorine which form more than one oxide..... and 1
- c) Write an equation for the reaction of each of these oxides with water.
 $Na_2O + \dots = \dots$
 $SO_2 + \dots = \dots$ 2
- d) Write an equation for the reaction that occurs between the products of your reaction in (c). 1
- e) Describe, as fully as you can, what you would see when a piece of Sodium is reacted with water. 1
- 22. There are isomers for the molecular formula C_4H_8 .**
- a) The molecules are saturated or unsaturated hydrocarbon? Why? 1
- b) Write the possible isomers of the molecules. Write IUPAC name. 3
- c) Which isomer can show cis-trans isomerism? Write cis-trans isomers. 2
- d) What product is obtained when butene react with hydrogen bromide? 1
- e) State Markovnikov's rule. 1

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

- Law of conservation of mass is not exactly followed by :
a. hydrolysis b. redox reaction c. nuclear reaction d. single displacement reaction
- How many molecules of H₂S are present in 0.4 mol of H₂S?
a. 2.41×10^{23} b. 6.62×10^{23} c. 6.023×10^{23} d. 2.6×10^{23}
- Equilibrium of the reaction: $2\text{SO}_2 + \text{O}_2 \rightleftharpoons 2\text{SO}_3 + 45.2 \text{ Kcal}$ will shift to left at:
a. low temperature and low pressure b. high temperature and low pressure
c. low temperature and high pressure d. high temperature and high pressure
- Quantum of light energy is carried by:
a. neutron b. photon c. electron d. proton
- In H₂O, O - atom is ___ hybridized.
a. sp b. sp² c. sp³ d. all
- Bleaching action of SO₂ is due to:
a. reduction b. oxidation c. hydrolysis d. all
- The gas involved in Bhopal gas leak tragedy was:
a. Methyl isocyanide b. Methyl isocyanate c. Methyl cyanide d. Methane gas
- Which one of the following is not a compound?
a. Lime stone b. Slaked lime c. Ozone d. Silica
- Which of the following liquid will be relatively difficult to be sucked into pipette?
a. Water b. Benzene c. Lemon juice d. Glycerol
- Which one of the following order is true in case of solubility of alkaline earth metal hydroxide on moving down the group?
a. $\text{Be}(\text{OH})_2 < \text{Mg}(\text{OH})_2 < \text{Ca}(\text{OH})_2 < \text{Sr}(\text{OH})_2 < \text{Ba}(\text{OH})_2$
b. $\text{Be}(\text{OH})_2 > \text{Mg}(\text{OH})_2 > \text{Ca}(\text{OH})_2 > \text{Sr}(\text{OH})_2 > \text{Ba}(\text{OH})_2$
c. $\text{Be}(\text{OH})_2 < \text{Mg}(\text{OH})_2 > \text{Ca}(\text{OH})_2 > \text{Sr}(\text{OH})_2$
d. $\text{Be}(\text{OH})_2 > \text{Mg}(\text{OH})_2 < \text{Ca}(\text{OH})_2 < \text{Sr}(\text{OH})_2$
- CO reacts with chlorine in the presence of sunlight to give:
a. Phosgene b. Chloroform c. Mustard gas d. Nitro compound

Group 'B'

Give short answer to the following questions

[8×5= 40]

- State Hund's rule of maximum multiplicity. Why is it called so? Illustrate the Hund's rule with reference to electronic configuration of nitrogen. [1+1+1]
 - Identify all four quantum numbers of 19th electron of chromium. [2]
- In the presence of platinum catalyst NH₃ is oxidized to nitric oxide the reaction is given below:

$$4\text{NH}_3 + 5\text{O}_2 \xrightarrow{\text{Pt}} 4\text{NO} + 6\text{H}_2\text{O}$$
 - Calculate the mass of nitric oxide produced by the reaction of 2 mol of NH₃ with 2 moles of oxygen. [2]
 - What is the importance of limiting reactant in chemical calculation? [1]
 - If 2 moles of NH₃ produce 50 gm of H₂O upon reaction with excess of O₂. What is the percentage yield of the reaction? [2]

14. Hydrogen sulphide is used as an analytical reagent for the detection of basic radicals.
- Write the chemical equation for the preparation of H_2S gas and discuss about the working mechanism of Kipp's apparatus. [1+3]
 - What happens when H_2S gas is passed through acidified KMnO_4 solution? [1]

OR

Oxides are binary compounds of oxygen with other elements except noble gases and noble metals. Some examples are:

ZnO	CO	MgO	CO_2	Na_2O_2	Fe_3O_4
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- Classify the above oxides. [3]
 - How does CFC deplete ozone layer? [2]
15. a. Show that $1\text{F} = 96500$ coulombs. [2]
- Balance the following redox reaction by oxidation number method:
 $\text{Br}_2 + \text{NaOH} \rightarrow \text{NaBr} + \text{NaBrO}_3 + \text{H}_2\text{O}$ [3]

OR

There are some reactions which are reversible in nature. Le-Chatelier's principle is a rule which positions to the left or right by altering specific conditions of the reaction.

- State Le-Chatelier's principle. [1]
 - An example of an equilibrium reaction can be seen as below between oxygen and nitrogen:
 $\text{N}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{NO}(\text{g})$
 When the temperature of the system is increased, the yield of NO increases. State whether the forward reaction is exothermic or endothermic. Explain your answer. [2]
 - Explain the effect of increasing pressure in the above reaction keeping the temperature constant. [1]
 - How are K_P and K_C related to each other in the above mentioned reaction? [1]
16. Ammonia is manufactured by Haber's process. Le - Chatelier's principle can be applied in Haber's process for the higher yield of NH_3 .
- Why is NH_3 highly soluble in H_2O ? [1]
 - What happens when excess NH_3 is passed through CuSO_4 solution? [2]
 - Mention any two reactions which show oxidizing nature of HNO_3 . [2]
17. Sodium extract or Lassaigne's extract should be prepared for the detection of foreign elements present in the organic compounds.
- Why is it necessary to prepare sodium extract for the detection of foreign elements present in the organic compounds? [2]
 - How is nitrogen detected in an organic compound? [2]
 - Why is it alkaline in nature? [1]
18. Organic compounds show isomerism.
- Write the functional isomers of $\text{C}_2\text{H}_4\text{O}_2$. [1]
 - Define geometrical isomerism. Write the geometrical isomers of but -2-ene with their names. [1+1]
 - What are enantiomers? Write the enantiomers of lactic acid. [1+1]
19. About 83% of the Nepalese territory is mountainous. Especially, the mountainous region of Nepal is enriched with several mineral deposits. So, study of extraction of metals is very important in the context of Nepal.
- Differentiate between pyrometallurgy and electrometallurgy. [2]
 - Define gangue and slag. [2]
 - What do you mean by calcination? [1]

Group 'C'

Give long answer to the following questions

[3×8= 24]

20. a. Give reason:
- A rain drop is spherical in shape.

- ii. Water can flow easily but honey can't.
- iii. Deliquescent substances turn into liquid when exposed to atmospheric air. [1+1+1]
- b. Point out main differences between crystalline and amorphous solids. [2]
- c. 60 liters of a gas were collected over water when barometer reads 741 mm and at temperature 23°C. The vapour pressure at 23°C is 21.1 mm. What volume would the dry gas occupy at NTP? [3]
21. The first ionization energies of second period elements are given below:

Name of element	Li	Be	B	C	N	O	F	Ne
First I.E. (KJ/mol)	520	899	801	1086	1403	1314	1681	2020

- a. Define ionization energy and electron affinity. [2]
- b. Mention the factors that affect the value of I.E. [2]
- c. Which of the above elements is most difficult to ionize? [2]
- d. Why is there steep rise in I.E. from carbon to nitrogen? [2]
- OR**
- Sulphuric acid is known as king of chemicals. The industrial use of this acid can be taken as indicator of the economic development of that country.
- a. Describe the manufacture of H₂SO₄ by contact process. [3]
- b. Draw the flow sheet diagram for the manufacture of H₂SO₄ by contact process. [2]
- c. Define fertilizer. [1]
- d. Mention any two examples of nitrogen fertilizer and potash fertilizer. [2]
22. When compound (A) is heated with metallic silver powder to give unsaturated compound (B). Compound (B) is passed through a copper tube heated at about 600°C to give aromatic compound (C) which is also obtained by decarboxylation reaction.
- a. Write the sequence of chemical equations with their IUPAC names. [3]
- b. Write any three characteristics of aromatic compounds. [3]
- c. Suggest a chemical test to distinguish acetylene from ethylene. [2]

NEB Examination - 2080

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

Rewrite the correct option in your answer sheet.

[11×1=11]

- The weight in grams of 11.2 L of SO₂ gas at NTP is:
 - 28 gm
 - 14 gm
 - 64 gm
 - 32 gm
- Which of the following quantum number is different for two electrons in the same orbital?
 - Azimuthal quantum number
 - Spin quantum number
 - Magnetic quantum number
 - Principal quantum number
- The oxidation number of Fe in Na₄ [Fe (CN)₆] is:
 - +2
 - +4
 - +3
 - +6
- Molecular formula of washing soda is:
 - CuSO₄.5H₂O
 - Na₂CO₃
 - Na₂CO₃.10H₂O
 - Al₂O₃
- Which of the following arrangement is correct with respect to the increasing order of acidic strength?
 - HCl < HBr < HI
 - HCl > HBr > HI
 - HI > HCl > HBr
 - HCl < HI < HBr

6. The main purpose of calcination and roasting is:
- to convert the ore into metal oxide
 - to remove refractory impurities
 - to convert ore into molten state
 - to reduce metal oxide to free metal
7. Sodium glucose pump is an example of:
- primary passive transport protein
 - secondary passive transport protein.
 - secondary active transport protein
 - primary active transport protein
8. What is the equation for equilibrium constant (K_c) for the following reaction? $\frac{1}{2}A(g) + \frac{1}{3}B(g) \rightleftharpoons \frac{2}{3}C(g)$
- a. $K_c = \frac{[A]^{1/2}[B]^{1/3}}{[C]^{2/3}}$ b. $K_c = \frac{[C]^{2/3}}{[A]^{1/2}[B]^{1/3}}$ c. $K_c = \frac{[C]^{2/3}}{[A]^{1/2}[B]^{1/3}}$ d. $K_c = \frac{[C]^{2/3}}{[A]^{1/2}[B]^{1/3}}$
9. In the manufacture of ammonia by Haber's process which conditions of pressure and temperature favour the forward reaction?
- $$N_2 + 3H_2 \rightleftharpoons 2NH_3 + 24 \text{ K Cal}$$
- High pressure and low temperature
 - Low pressure and high temperature
 - High pressure and high temperature
 - Low pressure and low temperature
10. IUPAC name of $CH_2(OH)CH(OH)CH_2(OH)$ is:
- Propane -1,2,3- triol
 - 2-Hydroxypropanediol
 - Propanol
 - 1,2,3- Trihydroxypropane
11. Batch process is used to manufacture:
- petrol
 - cement
 - diesel
 - cosmetics

Group 'B'

[8×5= 40]

12. Different gaseous laws are in chemistry to study the properties of gas
- What are real and ideal gas ? [1]
 - Derive the relation $PV = nRT$ [2]
 - A chemist measures the volume of a gas at different pressures at a constant temperature of 27°C . The data are as follows: [2]

Set	I	II	III	IV	V
P (in atm)	1	2	4	6	8
V (in L)	10	5	2.5	1.2	1.25

Calculate the number of moles of the gas in each case using the above data. As a chemist which one set of data is wrong in above table? [2]

13. Metallurgy deals with the extraction of metal from its ore.
- What are the differences between calcinations and roasting? [2]
 - What is meant by smelting? [1]
 - What are gangue and slag? [1]
 - What is the importance of flux in metallurgical operation? [1]
14. Modern periodic table was given by Mosley in 1913 after Mendeleev periodic table. It helps to study the elements in systematic way.
- State modern periodic law. [1]
 - What do you mean by electro negativity? [1]
 - What causes periodicity? [1]
 - How do nuclear charge and size of the atom influence the magnitude of the ionization energy? [2]

OR

- Differentiate between nascent hydrogen and molecular hydrogen. [2]
 - What are oxides? Classify the oxide as you know. [3]
15. Scientists Gulberg and Wage developed a law called law of mass action.

- a) State law of mass action. [1]
- b) Predict the effect of temperature and pressure on the following equilibrium:
 $2\text{SO}_2(\text{g}) + \text{O}_2 \rightleftharpoons 2\text{SO}_3(\text{g}), +45 \text{ Kcal}$ [2]
- c) Write the relationship between K_p & K_c for the following reaction:
 $\text{PCl}_5(\text{g}) \rightleftharpoons \text{PCl}_3(\text{g}) + \text{Cl}_2(\text{g})$ [1]
- d) Write any two characteristics of equilibrium constant. [1]

OR

In order to overcome the limitations of Rutherford's atomic model, Neil Bohr proposed a model which is known as Bohr's atomic model.

- a. What is quantization of angular momentum? [1]
- b. Write any two limitations of Bohr's atomic model. [1]
- c. What is wave-particle duality of matter? [2]
- d. Write the electronic configuration of: i. Cu^{++} ii. Cl^- [1]
16. Oxidation and reduction are common reaction in our day-to-day life.
- a) Define oxidation and reduction in terms of electronic concept. [1]
- b) Balance the following chemical equation by oxidation number method or ion electron method. $\text{Cu} + \text{HNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + \text{NO}_2 + \text{H}_2\text{O}$. [3]
- c) Show that $1 \text{ F} = 96500 \text{ C}$ [1]
17. Halogens are highly reactive and have high electro negativity values .
- a) Write down any two reactions which show the oxidizing nature of halogens. [2]
- b) How does chlorine react with hot and conc. NaOH ? [1]
- c) What happens when NH_3 is treated with CuSO_4 solution till excess [2]
18. Lassaigne's test is used for the detection of foreign element.
- a) What are foreign elements. [1]
- b) What is the purpose of making sodium extract for the detection of foreign element in an organic compound? [1]
- c) Why is sodium extract alkaline in nature? [1]
- d) Why the sodium extract is boiled with conc. HNO_3 during silver nitrate test for the detection of halogen? [2]
19. Alkane can be prepared from haloalkane, decarboxylation & catalytic hydrogenation of alkene.
- a) Write an example of decarboxylation reaction. [2]
- b) Write the chemical reaction when bromoethane is heated with sodium metal in the presence of dry ether. [2]
- c) How would you prepare ethane from ethyne? [1]

Group 'C'

[3×8= 24]

20. 100 gm of 80% pure CaCO_3 is completely reacted with excess HCl to produce CaCl_2 , H_2O and CO_2 .
- a) Which one is limiting reactant? [1]
- b) Calculate the mass of CaCl_2 formed. [1]
- c) How many moles of water are produced? [1]
- d) What volume of CO_2 is produced if the reaction is carried out at 27°C and 760 mm Hg pressure? [2]
- e) Prove that molecular wt. of any gas is twice its vapour density. [3]
21. a) State and explain Markovnikoff's rule and peroxide effect with suitable example. [3]
- b) Write the formula and name of functional isomer of $\text{C}_4\text{H}_8\text{O}$ [1]
- c) What is racemic mixture? Why is it optically inactive? [2]
- d) Why alkenes only show geometrical isomerism? [1]
- e) Convert ethanol to ethene. [1]
22. Nowadays, nitric acid manufactured by Ostwald's process.
- a) Write down the principle and reactions involved in the manufacture of nitric acid by Ostwald's process. [3]
- b) Draw flow sheet diagram for Ostwald's process. [2]

- c) What happens when highly Conc. HNO₃ is treated with iron? [1]
 d) Show ring test with reaction. [2]

OR

H₂S is used in lab for qualitative analysis of inorganic salts. So, it is prepared by using Kipp's apparatus.

- a) write the preparation reaction of H₂S gas. [1]
 b) Draw the diagram of Kipp's apparatus. [3]
 c) Write down any one reaction which shows H₂S as: [1+1]
 i) reducing agent ii) analytical agent
 d) Write principle and reaction involved for the manufacture of urea. [2]

NEB Examination - 2081

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

[11×1=11]

Rewrite the correct option of each question in your answer sheet.

- The rate of diffusion of Methane at a given temperature is twice that of gas 'X'. The molecular mass of 'X' is
 a. 64 b. 32 c. 4 d. 8
- Nitrogen has the electronic configuration $1s^2 2s^2 2p^1_x 2p^1_y 2p^1_z$ and not $1s^2 2s^2 2p^1_x 2p^1_y 2p^0_z$. This is determined by
 a. Aufbau principle b. Pauli's exclusion principle c. Hund's rule d. Uncertainty principle
- The correct order of second ionization energy of Carbon, Nitrogen, Oxygen, and Fluorine is
 a. C>N>O>F b. O>N>F>C c. O>F>N>C d. F>O>N>C
- NH₃ has a higher boiling point than expected because
 a. with water, it forms NH₄OH b. it has strong intermolecular covalent bonds
 c. it has intermolecular hydrogen bonds d. its density decreases on freezing
- $\frac{K_p}{K_c}$ for the reaction, $CO_{(g)} + \frac{1}{2} O_{2(g)} \rightleftharpoons CO_{2(g)}$
 a. 1 b. RT c. $\frac{1}{\sqrt{RT}}$ d. (RT)²
- If an acidified potassium dichromate paper is turned green, the gas is
 a. hydrogen sulphide b. carbon dioxide c. hydrogen chloride d. bromine
- Sodium-glucose pump is an example of
 a. primary active transport protein b. secondary active transport protein
 c. primary passive transport protein d. secondary passive transport protein
- In a metallurgical process, an acid flux is used to remove
 a. slag b. basic flux c. acidic gauge d. basic gauge
- CO reacts with Cl₂ in the presence of sunlight to give
 a. phosgene b. chloroform c. water gas d. blue flame
- Batch process is used to manufacture
 a. petrol b. cement c. diesel d. cosmetics
- Sodium carbonate can be manufactured by Solvay's process but potassium carbonate cannot be prepared because
 a. K₂CO₃ is more soluble b. KHCO₃ is more soluble than NaHCO₃
 c. KHCO₃ is less soluble than NaHCO₃ d. K₂CO₃ is less soluble

Group 'B'

[8×5= 40]

- An element 'X' has valence shell electronic configuration $3s^1$ and the other element 'Y' has $3s^2 2p^5$.
 a. Write the possible electronic configuration of X⁺ and Y⁻. [1]
 b. Write the name and valency of the elements 'X' and 'Y'. [1]

- c. What type of chemical bond is formed between 'X' and 'Y'? [1]
 d. Which has a larger size 'X' or 'Y'? Why? [1]
 e. Calculate the total number of s and p electrons in 'X' and 'Y'. [1]

OR

Given below are some elements with their first, second, and third ionization energies

Element	Na	Mg	Al
IE ₁ (KJmol ⁻¹)	495.8	736	577
IE ₂ (KJmol ⁻¹)	4563	1443	1833
IE ₃ (KJmol ⁻¹)	6916	7690	2745

- a. Infer, to which period of the periodic table they belong? [1]
 b. IE₁ of Mg is more than Al, why? [2]
 c. Why is there a steep rise in IE of sodium from IE₁ to IE₂ to IE₃? [2]
13. a. Show that 1 F=96500 coulombs. [2]
 b. If you are given the following redox reaction:

$$\text{Zn} + \text{HNO}_3 \longrightarrow \text{Zn}(\text{NO}_3)_2 + \text{NH}_4\text{NO}_3 + \text{H}_2\text{O}$$

 I. Balance the given reaction either by oxidation number or ion-electron method. [2]
 II. Indicate the number of HNO₃ molecules acting as an oxidizing and as an acidic agent. [1]
14. a) Differentiate crystalline and amorphous solids. [2]
 c) At high altitudes boiling point of liquid decreases. Why? [1]
 d) A gas has density 2.41 gL⁻¹ at 25° C and 770 mm of Hg. Calculate its molecular mass. [2]

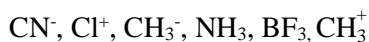
OR

- d) State Le- Chatelier's principle. [1]
 e) An example of an equilibrium reaction can be seen as below between oxygen and nitrogen

$$\text{N}_2(\text{g}) + \text{O}_2(\text{g}) \rightleftharpoons 2\text{NO}(\text{g})$$

 When the temperature of the system is increased, the yield of NO increases. State whether the forward reaction is exothermic or endothermic. Explain your answer. [2]
 f) Explain the effect of increasing pressure in the above reaction keeping the temperature constant. [1]
 g) How are K_p and K_c related to each other in the above reaction? [1]
15. Give reasons
 a. Phosphorous is called 'element of bone'. [1]
 b. CO is extremely poisonous. [1]
 c. Moist Cl₂ is bleaching agent. [1]
 d. Ammonia is highly soluble in water. [1]
 e. Nascent hydrogen is strong reducing agent. [1]
16. The principle and technology used to obtain metal in pure state from ore is called metallurgy. Three types of metallurgical operations are in use.
 a. What are mineral and ores? Give examples. [1]
 b. For which type of ore is extracted by hydrometallurgy. [1]
 c. Write the differences between calcination and roasting. [1]
 d. If CaO is flux and SiO₂ is impurity, which slag is formed? Write a reaction involved for this. [1]
17. Organic compounds are characterized by forming a typical homologous series.
 a. Define the term homologous series and homologue. [1]
 b. If the general formula of alcohol is C_nH_{2n+1}OH, write the molecular formula and IUPAC name of third member of alcohol. [2]
 c. Write its functional isomer. Mention its IUPAC and common name. [1+1]

18. a. Place the species in the table below. [3]



Electrophile	Nucleophile	Carbocation	Carbanion

- b. What is the inductive effect? Write its types with examples. [2]
19. Sodium carbonate (Na₂CO₃) is manufactured by the Solvay or ammonia soda process by using CO₂ and brine solution saturated with ammonia
- a. What is brine solution? [1]
- b. Write the basic principle for the manufacture of sodium carbonate by ammonia soda process. [2]
- c. Draw a flow sheet diagram for the manufacture of Na₂CO₃ [2]

Group 'C'

[3×8= 24]

20. a. 20 gm of 40 % pure CaCO₃ if reacted with 5 gm of HCl to produce CaCl₂, H₂O and CO₂.
- i. Find which one is the limiting reactant and why.
- ii. Calculate the mass of CaCl₂ formed.
- iii. How many numbers of water molecules are produced?
- iv. Calculate the volume of CO₂ produced at 27° C and 0.5 atmospheric pressure. [1+1+1+2]
- b. Show that the molecular mass of gas = 2 x Vapor density. [3]
21. Oxy acid of nitrogen is HNO₃ which can be manufactured by catalytic oxidation of ammonia.
- a. Write the principle and flowsheet diagram for the manufacture of nitric acid. [2+2]
- b. Write the laboratory test for nitrate ion in aqueous solution. [2]
- c. Write two reactions to show that conc. HNO₃ is an oxidizing agent. [2]

OR

Oxides are binary compounds of oxygen with other elements except for noble gases and noble metals some of the oxides are given below.

ZnO	CO	CO ₂	MgO	Na ₂ O ₂	Fe ₃ O ₄
?	?	?	?	?	?

- a. Classify the above oxides and write in the above table. [3]
- b. Write a stepwise reaction to manufacture of Urea in the industry and also draw flow sheet diagram. [3]
- c. How does CFC deplete ozone layer? [2]
22. An organic compound 'A' is produced by the dehydrohalogenation of C₃H₇Br (1 – Bromo propane). The compound 'A' is treated with ozone in the presence of CCl₄, compound 'B' and 'C' are formed
- a. Write the reaction sequence of the conversion of A to B and C. [3]
- b. State Markovnikov's rule. What happens when compound 'A' is added with HBr? [2]
- c. Explain Wurtz reaction. What happens when product obtained in (b) reacts with sodium metal in dry ether [2]
- d. How can you prove chemically the compound 'A' is unsaturated? [1]

Candidates must give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

- "No two electrons in a single atom can have the same set of four quantum numbers"
 - Hund's rule
 - Pauli exclusion principle
 - Aufbau principle
 - Bohr's principle
- A gas X diffuses 2 times faster than a gas with molecular mass M. The molar mass of the gas X is
 - M/2
 - M/4
 - 4M
 - 2M
- The shape of NH₃ is
 - tetrahedral
 - trigonal planar
 - pyramidal
 - octahedral
- Oxides of Nitrogen follow:
 - Law of constant proportions
 - Law of multiple proportions
 - Law of reciprocal proportions
 - Law of conservation of mass
- In the given reaction, which one favours the formation of the product?
 $2\text{SO}_2 + \text{O}_2 \rightleftharpoons 2\text{SO}_3 ; \Delta H = -ve$
 - Decrease in pressure
 - Increase in pressure
 - Increase in concentration of SO₃
 - Increase in temperature
- Excess of Na⁺ ions in human body causes
 - anaemia
 - high blood pressure
 - diabetes
 - low blood pressure
- Diamond is a
 - metallic crystal
 - electrovalent crystal
 - ionic crystal
 - covalent crystal
- What is the molecular formula of plaster of Paris?
 - CaSO₄. 2H₂O
 - CaSO₄. $\frac{1}{2}$ H₂O
 - CaSO₄. H₂O
 - CaSO₄. 5H₂O
- The reaction between phosphine and acids results in the formation of:
 - Phosphonium salts
 - Phosphoric acid
 - Both a and b
 - None of the above
- Which one of the following is radioactive?
 - Deuterium
 - Tritium
 - Helium
 - Protium
- The gas involved in the Bhopal gas leak tragedy was
 - methyl isocyanide
 - methyl isocyanate
 - methyl isocyanite
 - None

Group 'B'

[8×5= 40]

- An atom has one electron in its 4th shell.
 - Write the name of the element involved and its electronic configuration.
 - Calculate the number of s and p electrons
 - Calculate the total number of orbits and orbitals
 - Write the set of all 4 quantum numbers of the valence electron.

[1+1+1+2]

OR

The larger value of electron affinity indicates the greater tendency of an atom to accept an electron.

Elements	Li	Be	B	C	N	O	F	Ne
EA(kJ/mol)	-59.8	0	-23.0	-122	-20.1	-140.9	-327.9	0

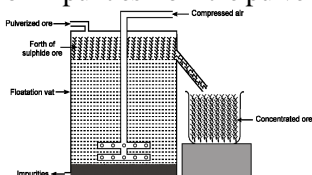
- a) Define electron affinity. [1]
 b) Why do Be and Ne have zero electron affinity? [2]
 c) Halogen has the highest affinity in the period. Why? [2]
13. a) Balance the following chemical equation using the oxidation number method or the ion-electron method. [3]

$$\text{KMnO}_4 + \text{KCl} + \text{H}_2\text{SO}_4 \longrightarrow \text{K}_2\text{SO}_4 + \text{MnSO}_4 + \text{H}_2\text{O} + \text{Cl}_2$$
- b) Prove that: $1F=96500$ coulombs [2]
14. The knowledge of limiting reactant predicts the amount of product formed in the reaction.
 For a reaction, $\text{Ca}(\text{OH})_2 + 2\text{NH}_4\text{Cl} \rightarrow \text{CaCl}_2 + 2\text{NH}_3 + 2\text{H}_2\text{O}$
 The reaction is carried out by mixing 7gm of pure $\text{Ca}(\text{OH})_2$ and 7 g of pure NH_4Cl .
- f. Find the limiting reactant.
 g. Calculate the moles of unreacted reactant left over.
 h. What mass of CaCl_2 will be formed?
 i. What volumes of NH_3 gas are produced at 27°C and 1.5 atm pressure?

OR

A chemical bond is the attractive force that holds two or more atoms together in a molecule.

- g. Differentiate intermolecular and intramolecular hydrogen bonds with an example. [2]
 h. Write any four differences between sigma and pi-bond. [2]
 i. Draw the Lewis dot structure of HNO_3 . [1]
- 16 a) The removal of impurities from the pulverized ore is called the concentration of ore.



- iv. What is the name of the process shown in the figure? [1]
 v. Which type of ore can be concentrated by this process? Give an example. [1]
 vi. Why is pine oil added in this process? [1]
 b) Write the difference between calcination and roasting. [2]
16. Oxides are binary compounds of oxygen with another element except noble gases and noble metals. Some examples are:
- a) Classify the given oxides into their respective category: [3]
- | | | | | | |
|-------------------------|-------------------------|---------------|--------------|-------------|-------------------------|
| Al_2O_3 | Na_2O_2 | SO_2 | CaO | CO | Fe_3O_4 |
|-------------------------|-------------------------|---------------|--------------|-------------|-------------------------|
- b) How does CFC deplete the ozone layer? [2]
17. In a large scale, ammonia is prepared by Haber's process. This process is the most common method for the synthesis of ammonia. [1+2+1+1]
- a) Write down any one reaction which shows the reducing nature of ammonia.
 b) What happens when NH_3 is treated with copper sulphate solution?
 c) Why does NH_3 turn mercurous nitrate paper black?
 d) What is the passivity of iron?
18. Sodium extract or Lassaigne's extract should be prepared for the detection of foreign elements present in the organic compounds.
- a) Why is it necessary to prepare a sodium extract for the detection of foreign elements present in the organic compounds? [2]

- b) How is nitrogen detected in an organic compound? [2]
 c) Why is it alkaline in nature? [1]
19. An organic compound 'A' was used in anaesthesia when it is heated with silver powder, yields compound 'B', which, on passing through an iron tube, produces an aromatic compound C_6H_6 [C]. Identify A, B and C with the reaction. Write the characteristics of aromatic compounds. [3+2]

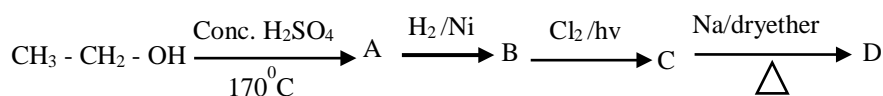
Group 'C' [3×8= 24]

20. a) Derive: $PV = nRT$ [3]
 b) Ammonia and sulphur dioxide gases are prepared in two corners of a laboratory. Which gas will be detected first by a student working in the middle of the laboratory, and why? [2]
 c) A straight glass tube of length 25 cm, HCl and NH_3 gases are allowed to enter at the same time. at what distance will ammonium chloride first appear from the ammonia end? [3]
21. Originally, Nitric acid was manufactured from sparked N_2 and O_2 in Birkeland- Eyde process. Nowadays, nitric acid is manufactured by Ostwald's process.
- a. Describe the manufacture of nitric acid by Ostwald's process with a flowsheet diagram. [4]
 b. What do you mean by potash fertilizer? Give any two examples of it. [2]
 c. Which nitrogenous fertilizer has the highest nitrogen content? Mention the raw materials required for the production of this nitrogenous fertilizer. [1+1]

Or

Sulphuric acid is an important chemical widely used from research laboratory to industrial application. The consumption rate of sulphuric acid shows the level of industrial development of the country and hence the prosperity.

- a) Describe the manufacture of Sulphuric acid by the contact process, including the principle and reaction involved. [4]
 b) Draw the flowsheet diagram for the manufacture of urea. [2]
 c) Why is the contact process named so? [1]
 d) In which fertilizer does Thomas slag belong to? Why? [1]
22. a) Identify A, B, C and D in the following reactions: [1+1+1+1]



- b) What happens when compound A undergoes ozonolysis? [2]
 c) How can you prove that Compound A is unsaturated? [2]

First Term Examination – I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Please complete at first section I (Botany) then section II (Zoology). Answer of each section should be in separate answer sheet.

Attempt all questions.

Section: I (Botany)

Group 'A'

[5×1 = 5]

Rewrite the correct option in your answer sheet.

- Cellular totipotency was experimentally confirmed from the cells of
A. Cabbage leaf b. Carrot root c. Pea plant d. Mustard seeds
- Outermost thin layer of chromosome is
a. matrix b. pellicle c. chromonema d. constriction
- Who proposed Three Domain System of Classification?
a. Mendel b. Linnaeus c. Woese d. Aristotle
- 'Omnis cellulae e cellulae.' proposed by
a. Robert Hooke b. Rudolf Virchow c. Carolus Linnaeus d. Robert Brown
- One of the following systems of classification is phylogenetic.
a. Linnaeus's b. Bentham and Hooker's c. Aristotle's d. Engler and Prantl's

Group 'B'

[4 × 4 = 16]

- Which type of nomenclature is in practice? Explain it. [1+3]
- Differentiate green algae from red algae. Give two examples from each also. [3+1]
- How did the Cell Theory come into existence? Give its features. [1+3]
- Why amitosis cell division is called indirect cell division? Explain with diagrams. [1+3]

Group 'C'

[2×8 = 16]

- What do you mean by classification? Discuss different systems of classification of organisms. [1+7]
- Which cell organelles are called self-replicating? What makes them so? Describe the structure and function of one which acts as the power generator of the cell. [1+1+4+2]

Section: II ((Zoology)

Group 'A'

[6×1 = 6]

Rewrite the correct option of each question in your answer sheet.

- The branch of science that deals with study of whales come under
a. Ichthyology b. Batrachology c. Marine Biology d. Mammology
- Use of bacteria in milk products is an example of which branch of biology?
a. Microbiology b. Biotechnology c. Parasitology d. Molecular biology
- The earth was supposed to be originated about
a. 3000 million yrs. ago b. 3600 million yrs. ago c. 4000 million yrs. ago d. 4600 million yrs. ago
- Which of the following is not the characteristic feature of Protozoa?
a. Unicellularity b. Prokaryotic form c. Microscopic d. Heterotrophism
- Cerebral malaria or black water fever or malignant malaria is caused by
a. *P. ovale* b. *P. falciparum* c. *P. vivax* d. *P. malariae*
- Cilium in *Paramecium* develops from
a. cytoplasm b. pellicle c. trichocyst d. basal granule

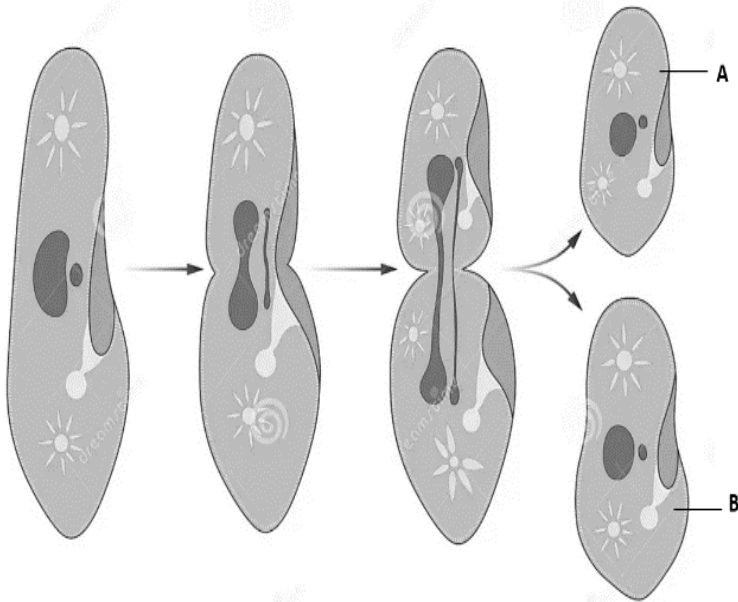
Group B

[4×4 = 16]

- Justify the statement, "Birds are glorified reptiles." 4

2. Explain how the evidences from embryology support organic evolution.
3. Study the given diagram and answer the following questions.

4
[1+3]



- a. Label A and B.
- a. Describe the given diagram with the help of well labelled diagram.
4. What is malaria? Describe symptoms and control measures of malaria. [1+1+2]

Group C

[2×8 = 16]

1. What is digenetic parasite? Explain the life cycle of *Plasmodium* in its Primary host. [1+4+3]
2. Biochemical theory of origin of life is considered as the most convincing theory regarding origin of life on earth. Why this theory is mostly accepted among scientific community and explains the various steps of it in detail. [1+3+2+2]

First Term Examination – II

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Please complete at first section I (Botany) then section II (Zoology). Answer of each section should be in separate answer sheet.

Attempt all questions.

Section: I (Botany)

Group 'A'

[5×1 = 5]

Rewrite the correct option in your answer sheet.

1. ----- is known as the Father of Taxonomy.
 - a. Carl Woese
 - b. Whittaker
 - c. Linnaeus
 - d. John Ray
2. Live cells were discovered by
 - a. Leeuwenhoek
 - b. Robert Hooke
 - c. Robert Brown
 - d. None of above
3. The hierarchy of classification is organized in the following order.
 - a. Kingdom, Phylum/Division, Order, Class, Family, Genus and Species
 - b. Kingdom, Phylum/Division, Class, Order, Family, Genus and Species
 - c. Kingdom, Phylum/Division, Order Class, Family, Species and Genus
 - d. None of above
4. One of the following cell organelle is called protein factory of the cell.
 - a. Nucleus
 - b. Mitochondria
 - c. Golgi body
 - d. Ribosome
5. Plant cells differ from animal cells in having
 - a. cell wall and cell membrane
 - b. cell wall and nucleus

- c. cell wall and mitochondria d. cell wall and plastids

Group 'B'

[4 × 4 = 16]

- How do you find the scientific names superior over the common names? [4]
- Which cell organelle is called food factory of the cell? Describe its structure with well labelled diagram. [1+3]
- What do you mean by domain? Name three domains of life. Give their characteristics also. [1+1+2]
- Elaborate the statement "Plasma membrane is trilaminar, lipoproteinous and sandwiched membrane" with necessary diagram. [1+2+1]

Group C

[2×8 = 16]

- Give two main features to identify an algae. Differentiate Green, Red and Brown Algae. Give two examples of each also. [1+4+3]
- Which cell division is called somatic cell division and why? Describe the process in detail with necessary diagrams. [1+4+3]

Section: II ((Zoology))

Group 'A'

[6×1 = 6]

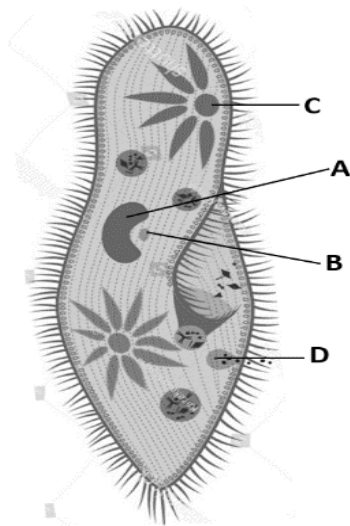
Rewrite the correct option in your answer sheet

- The study of structure and functions of cells come under
 - Morphology
 - Physiology
 - Cell anatomy
 - Cell biology
- Losing of legs in snakes is an example of
 - Progressive evolution
 - Retrogressive evolution
 - Divergent evolution
 - Convergent evolution
- Primordial soup refers to
 - Protobiont
 - Hot water with biomolecules
 - Coacervates
 - Hot water with primitive cells
- In the life history of *Plasmodium*, exflagellation occurs in
 - Merozoite
 - Microgametocyte
 - Macrogametocyte
 - Cryptozoite
- The number of daughter parameciums formed after 5th successive transverse binary fission is
 - 12
 - 16
 - 32
 - 64
- The motile stage of zygote formed by fertilization of macrogamete by a microgamete in *Plasmodium* is called
 - Sporozoite
 - Ookinete
 - Oocyst
 - Sporont

Group B

[4×4 = 16]

- Give the basic concept of biogenesis theory and explain Pasteur's experiment to support this theory. (1+3)
- Lamarckism is a failed theory regarding organic evolution. Justify it. (1+3)
- Identify A, B, C and D in the given diagram. Also mention a function of each one of them. (2+2)



4. What is schizogony? Explain the liver schizogony of *Plasmodium* with diagrams. (1+2+1)

Group C

[2×8 = 16]

1. Give the meaning of sexual reproduction and explain how it occurs in *Paramecium*. (1+4+3)
2. Define organic evolution. Also explain how the evidences from morphology and anatomy and paleontology support organic evolution. (1+4+3)

First Term Examination – III

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Please complete at first section I (Botany) then section II (Zoology). Answer of each section should be in separate answer sheet.

Attempt all questions.

Section: I (Botany)

Group 'A'

Rewrite the correct option of each question in your answer sheet.

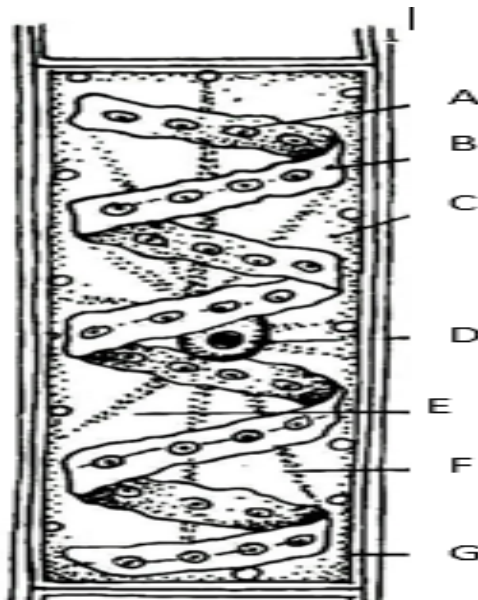
[5×1 = 5]

1. A plant cell must have
 - a. cell wall
 - b. plastid
 - c. mitochondria
 - d. a and b
2. Food factory of the cell is
 - a. lysosome
 - b. ribosome
 - c. mitochondria
 - d. plastids
3. Diploid phase in lifecycle of *Spirogyra* is represented by
 - a. zygospore
 - b. zygote
 - c. aplanospore
 - d. akinete
4. Basic unit of classification is
 - a. species
 - b. genus
 - c. family
 - d. taxon
5. All of following are membrane bound except
 - a. mitochondria
 - b. plastids
 - c. ribosomes
 - d. lysosomes

Group 'B'

[4×4 = 16]

6. Study the given diagram and answer the following questions.
 - a. Label the parts.
 - b. Explain the structure in brief.



7. Write a difference between chromatins and chromosomes. Describe the ultra-structure of a chromosome.
8. What is Five Kingdom System of Classification? Discuss its advantages. [1+3]
9. What do you mean by Sandwich model of plasma membrane? Give a short account with diagram. [1+3]

Group 'C'

[2×8 = 16]

10. Draw a well labelled diagram of a eukaryotic plant cell. Describe the structure and function of mitochondria. [4+4]
11. What are main features of algae? Differentiate Green algae, Brown algae and Red algae. Also mention two examples in each.

Section: II ((Zoology))

Rewrite the correct option of each question in your answer sheet.

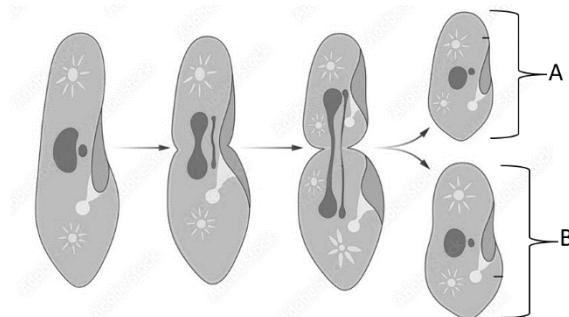
[6×1 = 6]

12. The study of improvement of human race by providing well balanced nutrition, by preventing infectious diseases, etc come under
 - a. Euthenics b. Euphenics c. Eugenics d. Euanthropology
13. On planet earth, the life firstly formed was believed to be
 - a. autotrophic organisms b. photoautotrophic organisms
 - c. chemoheterotrophic organism d. chemoautotrophic organism
14. Diagnosis of disease is concerned with
 - a. clinical pathology b. radiology c. lab technology d. all of the above
15. *Entamoeba histolytica* causes amoebic dysentery in human. It belongs to class
 - a. Rhizopodea b. Ciliata c. Flagellata d. Sporozoa
16. *Paramecium* contains
 - a. One micronucleus and one macronucleus
 - b. Two micronuclei
 - c. One micronucleus and one, two or more macronuclei
 - d. One macronucleus and one, two or more micronuclei
17. Which substance in *Plasmodium* causes fever and chills?
 - a. Haematin b. Sporozoite c. Haemozoin d. Schuffner's granules

Group 'B'

[4×4 = 16]

18. Give the basic concept of Special Creation Theory, Theory of Panspermia and Spontaneous Generation Theory of Origin of Life. [1+1+2]
19. Define paleontology and justify the statement "**Birds are glorified reptiles**". [1+3]
20. Study the given diagram and answer the following questions.
 - a. Label the parts A and B. [1]
 - b. Explain the given diagram with the help of well labelled diagram. [3]



21. Give the meaning of schizogony. Describe the liver schizogony of *Plasmodium* with labelled diagram. [1+3]

Group 'C'

[2×8 = 16]

22. Classify *Paramecium* and describe the external structure of *Paramecium*. Also draw a well labelled diagram of *Paramecium*. [1+4+3]
23. Oparin and Haldane Theory of Origin of Life is considered as the most convincing theory regarding origin of life on earth. Why this theory is mostly accepted among scientific community? Also explain the various steps of it in detail. [1+3+2+2]

First Term Examination – IV

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Please complete at first section I (Botany) then section II (Zoology). Answer of each section should be in separate answer sheet.

Attempt all questions.

Section I (Botany)

Group 'A'

Rewrite the correct option of each question in your answer sheet.

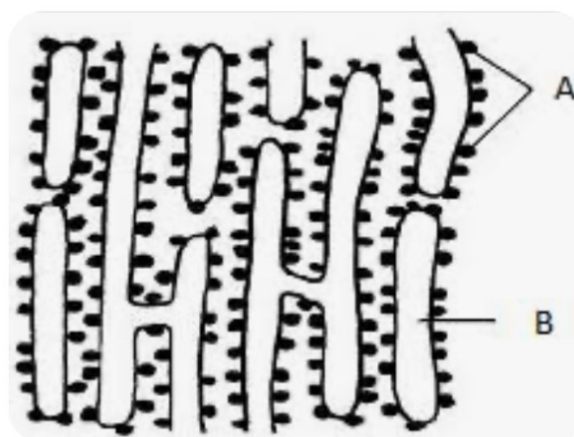
[5×1=5]

- Cell Theory was jointly proposed by
a. Schleiden and Schwann b. Watson and Crick c. Singer and Nickelson d. Danielle and Davson
- Protein factory of the cell is
a. plastids b. ribosomes c. lysosomes d. oxysomes
- Protoplasm differs from cytoplasm in having
a. cell wall b. cell membrane c. nucleus d. all of above
- Plant body of Spirogyra is a
a. thallus b. gametophyte c. sporophyte d. a and b
- Three Domains of life are
a. Archaea, Bacteria and Eukarya b. Archaea, Cyanobacteria and Eukarya
c. Bacteria, Cyanobacteria and Eukarya d. none of above

Group 'B'

[4×4 = 16]

- What do you mean by self-replicating cell organelles? Describe the one found only in the plant cell.
- Differentiate Artificial System and Natural System of Classification.
- Study the given diagram and answer the following questions.
a. Name the cell organelle and labelle.
b. Give two functions..



- Write a short note on Binomial Nomenclature

Group 'C'**[2×8 = 16]**

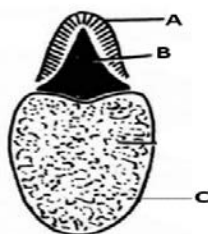
10. Draw a well labeled diagram of a prokaryotic cell and discuss the differences with that of a eukaryote. [3+5]
 11. Enlist two main features of algae not found in Fungi. Describe the life cycle of Spirogyra with necessary diagram. [1+3+4]

Section II (Zoology)**Group 'A'****Rewrite the correct option of each question in your answer sheet.****[6×1 = 6]**

12. Use of bacteria in milk products is an example of which branch of biology?
 a. Microbiology b. Biotechnology c. Parasitology d. Molecular biology
13. Life, in its simplest form, is believed to have formed in earth about
 a. 3000 million yrs. ago b. 3600 million yrs. ago. c. 1500 million yrs. Ago d. 4600 million yrs. ago
14. Phylogeny represents
 a. Embryological history of animals b. Serological similarities
 c. Evolutionary history of animals d. Comparative anatomy of animals
15. The statement which is not correct about cilia in *Paramecium* is
 a. They are present over entire cell b. They are made up of tubulin
 c. They are derived from pellicle d. They are of different length
16. Genetic information in *Paramecium* is contained in
 a. Micronucleus b. Macronucleus c. Both nuclei d. Mitochondria
17. Stage of *Plasmodium* infective to man and injected into human blood by mosquito is
 a. Trophozoite b. Gametocyte c. Sporozoite d. Cryptozoite

Group 'B'**[4×4 = 16]**

18. Biology has got so many scopes. Write short notes on various scopes of biology. [4]
 19. What did Miller and Urey do to test Oparin and Haldane's theory of biochemical origin of life? Also mention their observations and result with necessary diagram. [1+2+1]
 20. The given diagram represents undischarged trichocyst of *Paramecium*. Answer the questions related to the figure.
 i. Label A, B and C. [1]
 ii. Give the exact location of it in *Paramecium*. [1]
 iii. What is the function of this organelle in *Paramecium*? [2]



21. Define conjugation. Write the significances of conjugation in *Paramecium*. [1+3]

Group 'C'**[2×8 = 16]**

22. Explain why human is considered as secondary host for *Plasmodium*. Also describe the life cycle of *Plasmodium* in human with well labelled diagram. [1+4+3]
 23. Define evolution. Also explain how the evidences from morphology and anatomy and biochemistry support organic evolution. [1+4+3]

Second Term Examination – I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Please complete at first section I (Botany) then section II (Zoology). Answer of each section should be in separate answer sheet.

Attempt all questions.

Section: I (Botany)

Group 'A'

[5×1=5]

Rewrite the correct option in your answer sheet.

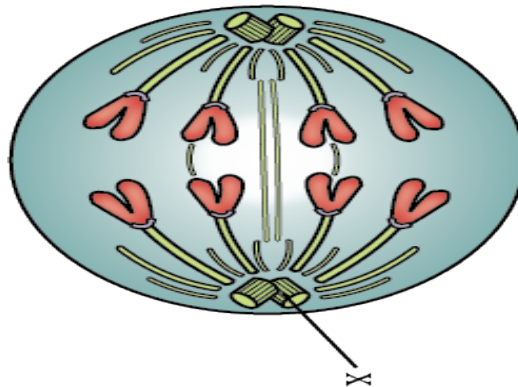
- DNA replication takes place during
a. G₁ phase b. G₂ phase c. S phase d. M phase
- Total numbers of pollen grains in the pollen sacs are 64. How many pollen mother cells were there?
a. 8 b. 16 c. 24 d. 32
- Vitamin D is synthesized in the presence of sunlight from
a. carbohydrates b. proteins c. lipids d. nucleic acids
- Euglena belongs to the kingdom
a. Monera b. Protista c. Mycota d. Plantae
- Spirogyra* differ from *Mucor* on the basis of
a. cell wall b. reserve food c. photosynthetic pigment d. all of the above

Group 'B'

Give short answers to the following questions.

[4 × 4 = 16]

- Look at the given diagram and answer the following questions.
a. Draw the diagram and label the different parts.
b. Identify the given stage
c. Write any four features of this stage



- How are proteins formed from amino acids? Discuss with necessary reaction [1+3]
- What are the principles of Whittaker's classification? Discuss its advantages over Linnaeus classification. [2+2]
- How the sexual reproduction takes place in heterothallic species of *Spirogyra*? Discuss. [1+3]

Group 'C'

Give long answers to the following questions.

[2 × 8 = 16]

- What do you understand by the reductional cell division? Why is it called so? Discuss Prophase I with necessary diagrams. [1+1+3.5+2.5]
- Name the different types of sexual life cycle found in yeast. Discuss them with necessary diagrams and relevant examples. [1+3+3+1]

Section: II (Zoology)

Group 'A'

Rewrite the correct option in your answer sheet.

[6×1 = 6]

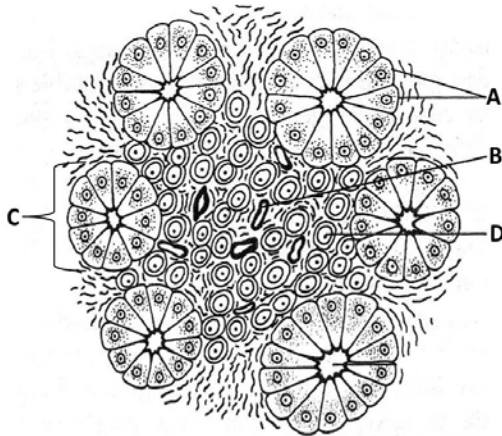
12. Who coined the term Biology for the first time?
a. Lamarck b. Aristotle c. Darwin d. Lamarck and Treviranus
13. Which scientist in his Recapitulation theory stated that “ontogeny recapitulates phylogeny”?
a. Ernst Haeckel b. Louis Pasteur c. Charles Darwin d. S.L. Miller
14. Who demonstrated that life originated from pre-existing cells?
a. Louis Pasteur b. Hugo de Vries c. Charles Darwin d. Stanley Miller
15. Which of the following theory was not given by Lamarck?
a. Environmental effect b. Effect of use and disuse of organs
c. Acquired characters d. Genetic drift
16. Movement of food vacuole in *Paramecium* is known as
a. endomixis b. digenesis c. cyclosis d. histogenesis
17. The quartan fever in malaria is caused by
a. *Plasmodium vivax* b. *Plasmodium malariae* c. *Plasmodium ovale* d. both a and b

Group 'B'

Give short answers to the following questions.

[4×4 = 16]

18. What do you mean by connecting link? Justify the statement “Birds are glorified reptiles”. [0.5+3.5]
19. What types of organisms are kept in phylum protozoan Protista? Write the class characters of phylum Protozoa with examples. [2+2]
20. Define the term metamerism. Mention the external apertures found in earthworm with their positions. [1+3]
21. Identify the given diagram and answer the following questions: [1+1+1+1]
- a. Label the diagram.
- b. Mention the function of label C and D.
- c. In which part of alimentary canal, the secretion from label C is secreted?



Group 'C'

Give long answers to the following questions:

[2×8 = 16]

22. What is organic evolution? Trace the evolution of human from the old-world monkeys onward. [1+7]
23. Give an account of alimentary canal of frog. [5+3]

Second Term Examination – II

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Please complete at first section I (Botany) then section II (Zoology). Answer of each section should be in separate answer sheet.

Attempt all questions.

Section: I (Botany)

Group 'A'

[5×1=5]

Rewrite the correct option in your answer sheet.

- Identify the correct bonding between nitrogen bases in DNA molecule from the given pair.
a. A = C b. A = T c. A = G d. A = U
- Sexual reproduction is absent in
a. phycmycetes b. ascomycetes c. basidiomycetes d. deuteromycetes
- mitosis helps to repair
a. wound b. injured parts c. dead cells d. all of the above
- The stage which serves as connecting link between **Meiosis I** and **Meiosis II** is
a. interphase b. interkinesis c. interphase i d. none of the above
- Which among the following is not a mode of asexual reproduction.
a. Budding b. Fragmentation c. Zoospore d. Zygosporangium

Group 'B'

Give short answers to the following questions.

[4×4=16]

- Why mitosis is also called equational cell division? Give some significances of mitosis. [1+3]
- Define amino acid. Discuss the role of peptide bond for the formation of protein. [1+3]



- Identify the given diagram and answer the following questions: [1+1+1+1]
 - Write the scientific name of given diagram
 - Label the different parts of it.
 - Name the fruiting body of mushroom.
 - How do mushroom reproduction?
- Where does *Spirogyra* live? Draw well labelled diagram of life cycle of *Spirogyra*. (no description required) [1+3]

Group 'C'

Give long answers to the following questions.

[2×8 = 16]

- What is the role of fungi in our daily lives? Describe the sexual reproduction of mycelial fungi you studied. [1+7]
- What do you understand by meiosis? Describe different stages of meiosis I with necessary diagrams. Write any two significance of it also. [3+5]

Second Term Examination – III

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Please complete at first section I (Botany) then section II (Zoology). Answer of each section should be in separate answer sheet.

Attempt all questions.

Section: I (Botany)

Group 'A'

[5×1=5]

Rewrite the correct option of each questions in your answer sheet.

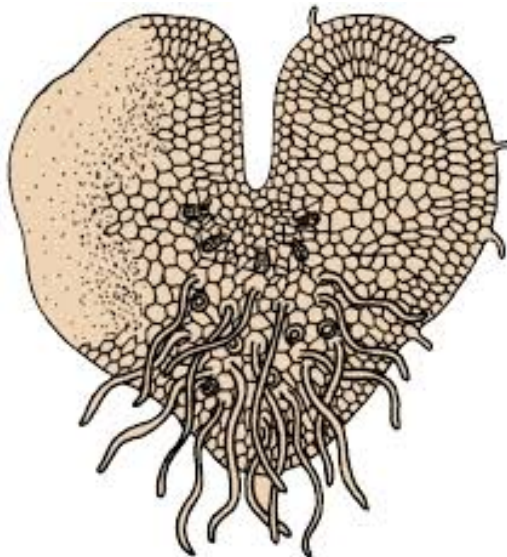
- In Meiosis,
 - first division is reductional.
 - first division is equational.
 - both divisions are reductional.
 - both divisions are equational.
- Perfect stage of the fungus is indicated by _____ reproduction.
 - vegetative
 - asexual
 - sexual
 - all of above
- Bacterial cell wall is made of
 - cellulose
 - lignin
 - chitin
 - murein
- Following statement is not true for pteridophytes.
 - They are vascular plants.
 - They show alternation of generations.
 - Dominant phase is sporophyte.
 - They are flowering plants.
- Nucleic Acids are polymers of
 - nucleotides
 - nucleosides
 - nuclear proteins
 - none of all

Group 'B'

[4 × 4 = 16]

- Why proteins are important biomolecules? Enlist their functions.
- Observe the following diagram and answer the following questions

[2+2]



- Identify the diagram.
 - Redraw and label its four major parts.
8. Name the species of yeast showing diplo-biontic lifecycle and give its diagrammatic representation. (*No description required*)

[1+3]

[1+3]

9. "Lichens are dual organisms". Elaborate this statement. And also mention its economic importance. [1+3]

Group 'C'

[2×8 = 16]

10. Why is mitosis called somatic cell division? Describe the process in detail with necessary diagrams. [1+3 +4]
 11. Mention two main features of fungi. Describe the life cycle of a mycelial fungi, you have studied with necessary diagram. [1+4+3]

Section: II (Zoology)

Group 'A'

Rewrite the correct option of each questions in your answer sheet.

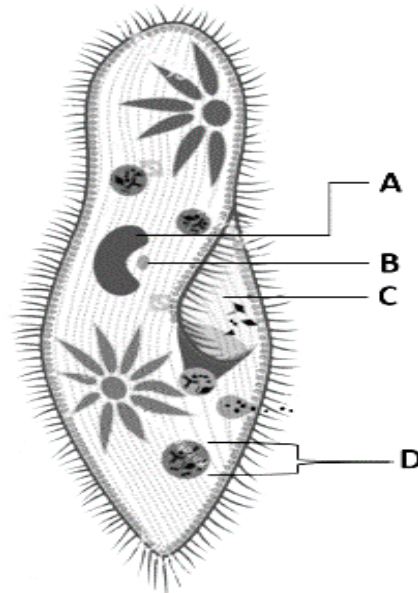
[6×1 = 6]

12. Oxygen in atmosphere has been formed by _____
 a. evaporation of water b. photosynthesis of blue green algae
 c. decaying organisms d. metabolism of microorganisms
13. Presence of gill slits in the embryos of all vertebrate support the theory of
 a. organic evolution b. biogenesis c. recapitulation d. metamorphosis
14. Which of the following human ancestor's fossil were first civilized fossils?
 a. *Homo habilis* b. *Pithecanthropus erectus* c. *Sinanthropus pekeninsis* d. *Homo neanderthalensis*
15. The tertian fever in malaria is caused by
 a. *Plasmodium vivax* b. *Plasmodium malariae* c. *Plasmodium falciparum* d. both a and c
16. Emulsification of fats by bile occurs in
 a. liver b. stomach c. intestine d. pancreas
17. The heart of frog consists of
 a. one superior venacava and one inferior venacava. b. two superior venacava and one inferior venacava.
 c. one superior venacava and two inferior venacava. d. two superior venacava and two inferior venacava.

Group 'B'

[4×4 = 16]

18. Explain how old world monkeys differ from new world monkeys. [4]
 19. Write down the name of various parts of alimentary canal of earthworm and describe the structure and functions of pharynx of earthworm with necessary diagram. [1+2+1]
 20. Study the given diagram and answer the following questions.
 a. Label the parts **A, B, C** and **D**. [1]
 b. Mention two differences between A and B. [2]
 c. What is the role of **D** in digestion? [1]



21. Describe the structure of lungs of frog with labelled diagram. [3+1]

Group 'C'**[2×8 = 16]**

22. Describe the various parts of alimentary canal of frog with necessary diagram. Also mention the name of part of alimentary canal of frog, which you think is the most important one and explain why? [6+2]
23. Define evolution and explain about the most accepted theory regarding evolution of life. [1+7]

Second Term Examination – IV**Class: XI****Time: 3 hrs.****F. M.: 75****P.M.: 30****Set: B**

Please complete at first section I (Botany) then section II (Zoology). Answer of each section should be in separate answer sheet.

Attempt all questions.

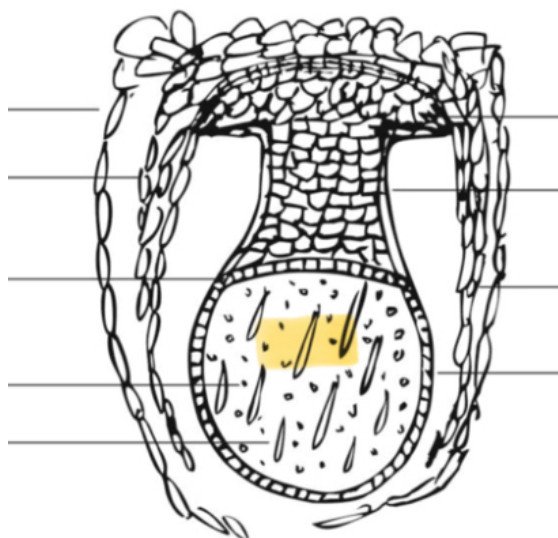
Section: I (Botany)**Group 'A'****[5×1=5]**

Rewrite the correct option of each questions in your answer sheet.

6. During cell division, DNA (chromosome) duplication occurs during _____ phase of interphase.
a. growth I b. synthesis c. growth II d. none of above
7. One of following is not true for Lichens.
a. They are dual organisms made of algae and fungi. b. They are composite thalloid plants.
c. They are sensitive to air pollutants. d. They reproduce by flowers.
8. One of the following is an unicellular fungi
a. *Mucor* b. *Rhizopus* c. *Saccharomyces* d. none of above
9. Which one of the following belong to Monera?
a. Green Algae b. Red Algae c. Brown Algae d. Bluegreen Algae
10. *Schizosaccharomyces octosporous* exhibits _____ life cycle.
a. haplobiontic b. diplobiontic c. haplodiplobiontic d. diplohaplobiontic

Group 'B'**[4 × 4 = 16]**

6. What are nucleic acid? Name their types. Differentiate them. [1+1+2]
7. Observe the following diagram & answer the questions. [1+2+1]



- a. Identify the diagram.
b. Redraw and label it.

- c. Mention what phase of generation it represents?
8. How does *Mucor* reproduce asexually? Describe with diagram. [2+2]
4
9. Why is bacteria included in Monera? Discuss its morphology. [2× 8 = 16]

Group 'C'

24. Mention two features of bryophytes. Describe its life cycle that you have studied with necessary diagram. [1+4+3]
25. Why meiosis is called reductional cell division? Describe the process upto Meiosis I with necessary diagrams. [1+4+3]

Section: II (Zoology)

Group 'A'

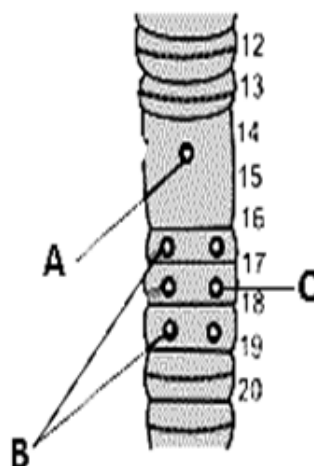
Rewrite the correct option of each questions in your answer sheet. [6×1 = 6]

12. By studying analogous structures, we look for similarities in
a. appearance and function but different in structure b. appearance but differences in functions
c. organ structure d. the cell make-up
13. Living organism with oldest history is
a. *Archaeopteryx* b. dinosaur c. horse d. human
14. The human ancestral fossil form which has used fire for the first time is
a. *Homo sapiens fossilis* b. *Homo sapiens neanderthalensis* c. *Sinanthropus* d. *Australopithecus*
15. Schuffner's granules are found in one of the following stages of malarial parasite
a. Trophozoite b. Sporozoite c. Schizont d. Merozoite
16. HCl secreting cells present in the stomach of frog is
a. parietal cells b. peptic cells c. zymogen cells d. goblet cells
17. Tadpole larva of frog showsrespiration.
a. cutaneous b. branchial c. pulmonary d. buccopharyngeal

Group 'B'

[4×4 = 16]

18. Explain how the evidences from embryology support organic evolution. [4]
19. Give the meaning of digestion and explain how digestion of food occurs in the stomach of frog. [1+3]
20. The given diagram represents some openings of earthworm. Answer the questions related to the figure.
i. Label **A**, **B** and **C**. [1]
ii. Name the secretions from **A** and **C**. [1]
iii. What is secreted from **B** and what is the function of it? [2]



21. Describe external structure of heart of frog with necessary diagram. [3+1]

Group 'C'

[2×8 = 16]

22. Give the meaning of inspiration and expiration and write down the steps of them in frog with necessary diagrams. [1+4+3]
23. Explain why Darwinism is also called theory of Natural Selection and describe the various postulates of it with examples. [1+5+2]

Send - Up Examination – 2079

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Use separate answer sheets for Botany and Zoology.

Answer the questions in your own words with suitable illustrations wherever necessary. Do not scatter answers. Figures at the margin indicate marks for each type.

Part I (Botany)

Group 'A'

Rewrite the correct option in your answer sheet.

[5×1 = 5]

1. Gametophyte of fern bears:
a. true roots. b. antheridium c. archegonium d. both b and c
2. Enzymes are:
a. bio-catalysts b. proteinaceous substances c. specific in action d. all of above
3. One of the following is a sac fungus:
a. *Rhizopus* b. *Mucor* c. *Agaricus* d. *Saccharomyces*
4. In meiosis:
a. both divisions are equational.
b. first division is reductional and second division is equational.
c. first division is equational and second division is reductional.
d. both divisions are reductional.
5. Following chemicals are major constituents of acid rain:
a. H_2CO_3 and HNO_3 b. HNO_3 and H_2SO_4 c. H_2SO_4 and H_2CO_3 d. HCl and H_2SO_4

Group 'B'

Give short answer to the following questions:

[4×4 = 16]

6. How are hydrophytes classified? What kind of morphological adaptations are found in hydrophytes? [1+3]
7. Compare the sporophytes of a Bryophyte and a Pteridophyte you have studied.

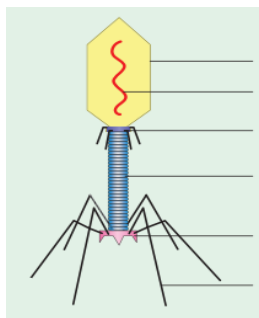
Or

Give diagrammatic representation of haplo-diplobiontic life cycle of yeast with example.

(No description required)

[3+1]

8. Which cell organelle is called the power house of the cell and why? Describe its structure. [1+3]



9. Study the diagram and answer the following: [2+2]

- a. Identify and label it. b. Give economic importance of this organism.

Group 'C'

Give long answer to the following questions: [2×8 = 16]

16. Write the distinguishing features of the family Liliaceae with necessary diagrams. Give its floral formula and floral diagram. Also mention botanical names of any two plants of this family along with their importance. [3+1+2+2 = 8]

Or

Define ecosystem. Describe the forest ecosystem in detail with necessary diagrams. [1+3+4 = 8]

17. Why is mitosis division called somatic cell division? Describe the process with necessary diagrams. Also mention two important significances of this type of division. [1+3+3+1 = 8]

Part II ((Zoology))

Group 'A'

Rewrite the correct option in your answer sheet. [6×1 = 6]

12. Term 'Biology' was introduced by:
a. Aristotle b. Lamarck c. Darwin d. Linnaeus
13. Pasteur is famous for discovering
a. vaccination b. cell theory c. blood groups d. germ theory of disease
14. Which of the following is mainly responsible for the extinction of wildlife?
a. pollution of air and water b. hunting of flesh c. destruction of habitats d. all of these
15. Body is unsegmented in:
a. *Taenia* b. *Fasciola* c. earthworm d. cockroach
16. In human blood, the infective stage of *Plasmodium* through the mosquito bite is:
a. schizont b. merozoites c. sporozoites d. trophozoite
17. A frog lives in water or near water because:
a. it can get its food easily in water. b. its hind limbs are webbed and help in swimming.
c. it respire through the skin. d. it can see through its transparent eyelids while swimming.

Group 'B'

Give short answer to the following questions: [4×4 = 16]

18. What are coacervates? How are they formed? [1+3]
19. Give an account of binary fission in *Paramecium*. [2+2]
20. Write a short note on migratory behavior of birds. 4
21. Enumerate the characters of phylum Mollusca 4

Group 'C'

Give long answer to the following questions: [2×8 = 16]

22. Define evolution. Give an account on the evolution of human starting from the Anthropoids. [1+7 = 8]
23. Describe the internal structure of the heart and its working mechanism. [4 + 4 = 8]

Send - Up Examination – 2080

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Answer of each part should be in separate answer sheet.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Part: I (Botany)

Group 'A'

[5×1=5]

Rewrite the correct option in your answer sheet.

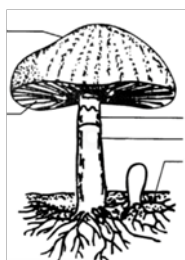
6. Nucleotides are made of:
a. purines + sugar + phosphate
b. pyrimidine + sugar + phosphate
c. purine/pyrimidine + sugar + phosphate
d. none of the above.
7. Total number of pollen grains (microspores) in a pollen sac is 100. How many microspore mother cells were there?
a. 100 b. 50 c. 25 d. 200
8. *Spirogyra* differs from *Mucor* in having:
a. filamentous thallus
b. spiral ribbon like chloroplast
c. chlorophyll pigments
d. all of the above
9. Correct sequence of hierarchy in classification is:
a. genus, phylum, family, species, order, class
b. class, family, species, phylum, genus, order
c. family, class, genus, phylum, order, species
d. species, genus, family, order, class, phylum
10. Relationship between two organisms in which one is benefitted while another one is neither benefitted nor harmed, is:
a. mutualism b. commensalism c. symbiosis d. proto-cooperation

Group 'B'

[4×4=16]

Give short answers to the following questions.

1. Give two main features of Gymnosperms. Describe the female cone of *Pinus*. [1+3]
2. Differentiate RNA from DNA.
3. Study the diagram and answer the questions below: [1+1+1+1]



- a. Redraw the diagram and label.
- b. Name the structure
- c. Name the organism having this phase.
- d. What is its significance?

OR

- What are lichens? How can they be beneficial? [1+3]
4. What do you mean by ecological imbalance? Discuss one of them. [1+3]

Group 'C'

[2×8 = 16]

Give long answer to the following questions.

1. Write the distinguishing features of family Brassicaceae with necessary diagrams. Give its floral diagram floral formula. Also mention any four plants of this family along with their importance. [2+2+1+1+2]

OR

- What do you mean by alternation of generations? Discuss with reference to life cycle of *Marchantia*. [1+3+4]
2. Draw well labeled diagram of a eukaryotic plant cell. Describe the in structure and function of the cell organelle found only in the plant cell. [2+4+2]

Part: II (Zoology)

Group 'A'

[6×1=6]

Rewrite the correct option in your answer sheet.

- Study of animal behavior is known as
 - Cytology
 - Histology
 - Ethology
 - Etiology
- Crustaceans' gills and gills present in fish perform the same function of absorbing dissolved oxygen from water but these organisms bear no close phylogenetic links. This gives the concept of
 - divergent evolution
 - convergent evolution
 - retrogressive evolution
 - parallel evolution
- Head is developed for the first time in:
 - Cnidarians
 - flatworms
 - roundworms
 - Annelids
- Emulsification of fats by bile occurs in:
 - liver
 - stomach
 - intestine
 - pancreas
- In hermaphrodite earthworm, self-fertilization is restricted and only cross fertilization takes place. It is due to:
 - location of testes and ovaries in different segments
 - ovaries maturing later than testes
 - testes maturing later than ovaries
 - due to fertilization occurring inside cocoon
- A fish migrates from fresh water to sea water for spawning. This is an example of:
 - anadromous migration
 - catadromous migration
 - potamodromous migration
 - amphidromous migration

Group 'B'

Give short answers to the following questions.

[4×4 = 16]

7. Though Apes and Modern man resemble in their chromosomal number, they differ in many respects. How do you distinguish them?

OR

Draw well labeled diagram of *Paramecium*. Also give its systematic position.

- Explain the process of copulation and cocoon formation in earthworm.
- Describe some important characters of Aves and Mammal with examples.
- Air pollution is one of the major problems in a city like Kathmandu. Write down the major causes and consequences of air pollution in Kathmandu.

Group 'C'

Give long answers to the following questions.

[2×8 = 16]

- Origin of life on earth is one of the greatest mysteries till date. Describe the most accepted theory regarding the origin of life on earth. [8]
- Malarial parasite is digenetic. Elaborate the statement. Describe the life cycle of *Plasmodium* in human host. [2+4+2]

OR

Describe with labelled diagram, the mechanism of breathing in frog.

[4+4]

Send - Up Examination – 2080

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Answer of each part should be in separate answer sheet.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Section: I (Botany)

Group 'A'

[5×1=5]

Rewrite the correct option in your answer sheet.

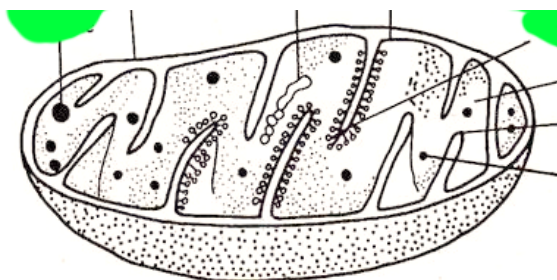
- All enzymes are biocatalysts made of :
a. carbohydrates b. proteins c. lipids d. nucleic acid
- During meiosis, crossing over takes place in:
a. leptotene b. zygotene c. pachytene d. diplotene
- Pteridophyte differs from Bryophyte, in having:
a. dominant phase of sporophyte b. presence of vascular tissue
c. sporophyte independent d. all of above
- Eukaryotic, autotrophic organism are included in kingdom:
a. Monera b. Protozoa c. Plantae d. Mycota
- Lotus is an example of hydrophyte.
a. submerged b. floating leaved c. free floating d. emergent

Group 'B'

[4 × 4 =16]

Give short answers to the following questions.

- What are proteins? Justify the statement that they are important biomolecules. [1+3]
- Dominant phase of *Marchantia* is gametophyte. How do you justify? [1+2+1]
- Identify the cell organelle. [1+2+1]



- Redraw and label
- Discuss its functions.

OR

Define inflorescence. Differentiate between racemose and cymose types. [1+3]

- Give the diagrammatic representation of haplo-diplobiotic life cycle of yeast with example. (No description required)

Group 'C'

[2×8 = 16]

Give long answer to the following questions.

- Why mitosis is called somatic cell division? Describe the process with necessary diagram. Also mention important significance of it. [1+2+3+2]

OR

What are important characters of algae? Differentiate green algae, red algae and brown algae with examples in each. [2+2+2+2]

- What do you mean by biogeochemical cycles? What are their types? Discuss nitrogen cycle. [1+1+3+3]

Section: II (Zoology)

Group 'A'

[6×1=6]

Rewrite the correct option in your answer sheet.

- Study of *Hydra* comes under
a. Cnidology b. Hydrology c. Parazoology d. Coelenterology
- Primordial soup refers to
a. protobiont b. hot water with biomolecules
c. coacervates d. hot water with primitive cells
- Flatworms are
a. acoelomate b. pseudocoelomate c. true coelomate d. diploblastic
- Which of the following stage of *Plasmodium* escapes digestion in the: gut of mosquito?
a. Sporozoite b. Trophozoite c. Merozoite d. Gametocyte
- Nephridiopores are the opening through which metabolic wastes are passed outside. They are the openings of:
a. septal nephridia b. integumentary nephridia c. pharyngeal nephridia d. coelom
- Which of the following animal shows active volant adaptation?
a. Flying fish b. Flying frog c. Flying lizard d. Bat

Group 'B'

Give short answers to the following questions.

[4×4 = 16]

- Give the meaning of vestigial and atavistic organs and explain how they support organic evolution.

OR

Discuss the causes and consequences of water pollution in your home town.

- Describe the structure of septal nephridium of earthworm with diagram.
- Give the difference between following terms:
a. Sessile and sedentary b. Bilaterally symmetrical and radially symmetrical
c. External and internal fertilization d. Direct and indirect development
- Define reflex action. Describe the mechanism of reflex arc with diagram.

Group 'C'

Give long answers to the following questions.

[2×8 = 16]

- Define evolution. Explain the theory of Natural Selection with example. [1+7]
- What do you mean by sexual reproduction? Explain the process of sexual reproduction in unicellular *Paramecium* with diagrams. [1+3+4]

OR

Describe the internal structure of frog's heart with necessary diagram. Also explain why frog can survive even with mixed blood circulation in its body. [4+4]

Send - Up Examination – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions

Part: I (Botany)

Group 'A'

[5×1=5]

Rewrite the correct option of each question in your answer sheet.

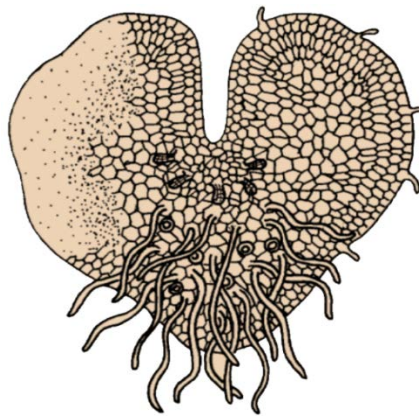
- One of the following is not a type of plastids.
a. Chloroplast b. Chromoplast c. Leucoplast d. Phragmoplast

2. "All cells of the body arise from pre-existing cells". Who proposed this statement?
a. Robert Hooke b. Robert Brown c. Rudolf Virchow d. None of above
3. One of the following is a prokaryotic organism.
a. *Rhizopus* b. *Spirogyra* c. *Nostoc* d. *Saccharomyces*
4. Submerged hydrophytes have
a. no or poorly developed roots. b. soft and spongy stems. c. small dissected leaves. d. all of above.
5. Relationship between two organisms in which one is benefitted while other one is neither benefitted nor harmed is
a. commensalism b. predation c. mutualism d. parasitism

Group 'B'

[4 × 4 = 16]

7. Why chloroplast is called food factory of the cell? Describe its structure with necessary diagram. [1+3]
8. Identify and label the following diagram. Also explain in brief. [1+1+2]



9. *Spirogyra* reproduces commonly by conjugation. Discuss it with necessary diagrams. [3+1]

OR

Give diagrammatic representation of haplo-diplobiontic life cycle of Yeast with example. (*No description required*)

10. What do you mean by conservation of biodiversity? Differentiate ex-situ and in-situ conservation. [1+3]

Group 'C'

[2×8 = 16]

Give long answers of following questions.

10. Write the distinguishing features of the family Cruciferae with necessary diagrams. Give its floral formula and floral diagram. Also mention botanical names of any four plants of this family along with their importance. [3+1+2+2]

OR

Define ecosystem. Discuss main components with regard to an aquatic ecosystem and give necessary diagrams. [1+5+2]

11. Why is mitosis called equational cell division? Describe the process with necessary diagrams. Also mention two important significances of this type of division. [1+3+3+1]

Part: II (Zoology)

Group 'A'

[6×1=6]

Rewrite the correct option of each question in your answer sheet.

12. The super class pisces consists of all fish. Study of pisces comes under

- a. pisciology b. ichthyology c. herpetology d. ornithology
13. Crustaceans' gills and gills present in fish perform the same function of absorbing dissolved oxygen from water but these organisms bear no close phylogenetic links. This gives the concept of
 a. divergent evolution b. convergent evolution c. retrogressive evolution d. parallel evolution
14. Which of the following statement about spider is incorrect?
 a. Its body is divisible into prosoma and opisthosoma. b. It has one pair on antenna.
 c. It has book lung for respiration. d. It has 4 pairs of legs.
15. Cilia are the locomotory structures present in *Paramecium*. Each cilium develops from
 a. pellicle b. trichocyst c. ectoplasm d. basal granule
16. In hermaphrodite earthworm, self-fertilization is restricted and only cross fertilization takes place. It is due to
 a. location of testes and ovaries in different segments. b. ovaries maturing later than testes.
 c. testes maturing later than ovaries. d. due to fertilization occurring inside cocoon.
17. Response of organism to stimulus of touch is called
 a. phototaxis b. thigmotaxis c. hydrotaxis d. thigmotaxis

Group 'B'

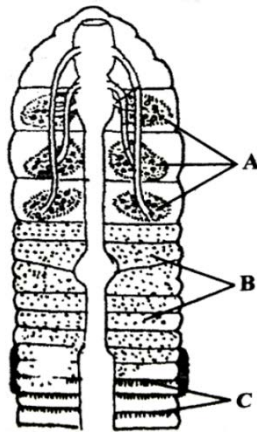
[4 × 4 =16]

18. Paleontology is the study of past life as revealed by fossils. Explain how the evidences from paleontology speak in favor of organic evolution.

OR

Give the concept of National Park, Wildlife Reserve and Hunting Reserve in context to Nepal. [2+1+1]

19. Study the given diagram and answer the following questions. [1+2+1]



- a. Label A, B and C.
 b. Write about the location of these parts A, B and C.
 c. Explain why C is also called enteronephric nephridia?
20. Mammals are considered as the most advanced organisms. Describe the important characters of class Mammalia with examples. [3+1]
21. Water pollution is one of the major problems in a city like Kathmandu. Write down the major causes and consequences of water pollution in Kathmandu. [2+2]

Group 'C'

[2×8 = 16]

22. The gradual and orderly change from one condition to another is known as evolution. Explain how the evolution of organisms takes place according to New Darwinism.
23. Explain why human is considered as secondary host for *Plasmodium vivax*. Also describe the life cycle of *Plasmodium* in human host with necessary diagrams. [1+4+3]

OR

Give the meaning of digestion and describe with labelled diagram on the alimentary canal of *Rana figrina*. [1+4+3]

Send - Up Examination – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Part: I (Botany)

Group 'A'

[5×1=5]

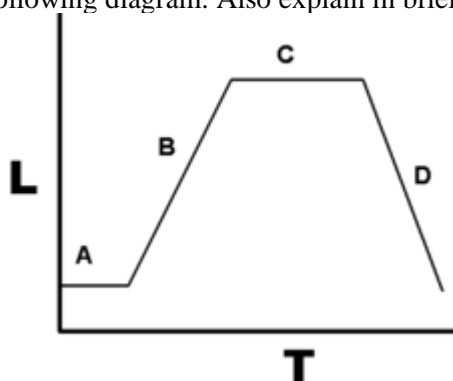
Rewrite the correct option of each question in your answer sheet.

1. Which one of the following is the longest phase in karyokinesis of the meiotic I cell division?
 b. Prophase I b. Metaphase I c. Anaphase I d. Telophase I
2. The chemical bond present in nucleic acids to join monomeric components is bond.
 a. phosphodiester b. peptide c. glycosidic d. hydrogen
3. One of the following is a sac fungus.
 a. *Rhizopus* b. *Mucor* c. *Agaricus* d. *Saccharomyces*
4. Three domain system of taxonomy was proposed by
 a. Whitaker. b. Carolus linnaeus. c. Carl woese. d. None of above.
5. Following chemicals are major greenhouse gases.
 a. CO₂ and H₂O b. CH₄ and CO₂ c. CO₂ and SO₂ d. H₂O and SO₂

Group 'B'

[4 × 4 =16]

6. What are proteins? Discuss protein as an important biomolecule. [1+3]
7. Redraw, identify and label the following diagram. Also explain in brief. [1+1+1+1]



8. Compare the male cone and female cone of a Gymnosperm you have studied. [2+2]

OR

What do you mean by succession? Mention different stages in general process of succession? [1+3]

9. Mention different types of biogeochemical cycles. Give graphic representation of Nitrogen cycle. (*No description required.*) [1+3]

Group 'C'

[2×8 = 16]

10. Write the distinguishing features of the family **Solanaceae** with necessary diagrams. Give its floral formula and floral diagram. Also mention botanical names of any four plants of this family along with their importance. [3 +1 +2 +2]

OR

What do you mean by alternation of generations? Discuss it in reference to life cycle of a Bryophyte you have studied. [1+4+3]

11. Draw a well labelled diagram of a eukaryotic cell. Enlist two important features of such type of cells. Describe the structure and function of a major cell organelle that is common to both plant and animal cell. [3+1+2.5+1.5]

Part: II (Zoology)

Group 'A'

[6×1=6]

Rewrite the correct option of each question in your answer sheet.

12. Exobiology is the study of
 a. outer parts of the living organisms. b. origin of living organism.
 c. living organism in outer space. d. none of above.
13. The cranial capacity of Java ape man was about
 a. 560cc b. 1000cc c. 1300cc d. 900cc
14. Radially symmetrical body is absent in
 a. *Hydra* b. *Sycon* c. Star fish d. *Ascaris*
15. The motile stage of zygote formed by fertilization of macrogamete by a microgamete in *Plasmodium* is called:
 a. Sporozoite b. Oocyst c. Ookinete d. Gamont
16. *Ascaris* is
 a. True coelomate. b. Haemocoelomate. c. Pseudocoelomate. d. Acoelomate.
17. The largest protected area of Nepal is
 a. Shey-Phoksundo national park b. Chitwan national park
 c. Kanchenjunga conservation area d. Annapurna conservation area

Group 'B'

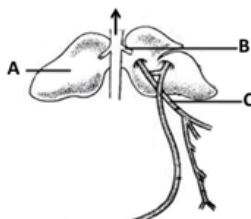
[4 × 4 =16]

18. Give the meaning of vestigial and atavistic organs with examples and also explain the justification of presence of such organs. [3+1]

OR

Wildlife has immense importance but it has depleted day by day. Give your view to conserve wildlife in context to Nepal. [1+3]

19. Study the figure and answer the following questions. [1+1+2]
 a. Label the parts A, B and C.



- b. What type of system the given diagram represents?
 c. What are the significances of this system?
20. What is conjugation? Describe the significances of conjugation in *Paramecium*. [1+3]
 21. Give the meaning of adaptation and explain the adaptational features present in primary aquatic animal like fish. [1+3]

Group 'C'

[2×8 = 16]

22. Origin of life on earth is one of the greatest mysteries till date. Describe the most accepted theory regarding the origin of life on earth. [3+3+2]
 23. What do you mean by respiration? Describe the process of inspiration and expiration in frog with necessary diagrams. [1+4+3]

OR

What is reproduction? Describe the male reproductive system of earthworm with diagram. [1+4+3]

Send - Up Examination – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: C

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Part: I (Botany)

Group 'A'

[5×1=5]

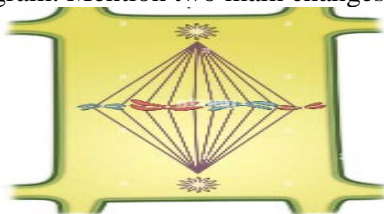
Rewrite the correct option of each question in your answer sheet.

1. Prothallus of Pteridophytes exhibits phase.
a. gametophytic b. sporophytic c. vegetative d. all of above
2. In meiosis,
a. both divisions are equational.
b. both divisions are reductional.
c. first division is reductional and second one is mitotic.
d. first division is mitotic and second one is reductional.
3. Which one of the following does belong to Fabaceae family?
a. Peanut b. Radish c. Potato d. Garlic
4. Which one of the following is a world natural heritage site?
a. Dhorpatan Hunting Reserve b. Royal Chitawan National Park
c. Koshitappu Wildlife Reserve d. All of above
5. Pleomorphic bacteria that exhibits two or more morphological forms, is well represented by
a. *Vibrio cholera* b. *Rhizobium leguminosarum*
c. *Micrococcus denitrificans* d. *Mycobacterium tuberculosis*

Group 'B'

[4 × 4 =16]

6. Do you know the technical terms for sac fungi and club fungi? How do you differentiate them? [1+3]
7. Identify and label the following diagram. Mention two main changes from the previous stages. [2+2]



8. What are two main features of algae? Describe the structure of *Spirogyra* with necessary diagrams. [1+3]

OR

Lichens are used in pollution study as bio-indicator of air pollution. Why? Also mention its other importance. [1+3]

9. What do you mean by ecological imbalances? What are its consequences? Explain one of them in context to your home town. [1+1+2]

Group 'C'

[2×8 = 16]

10. Write the distinguishing features of the family Cruciferae with necessary diagrams. Give its floral formula and floral diagram. Also mention botanical names of any four plants of this family along with their importance. [3+1+2+2]

OR

Define ecosystem. Discuss main components with regard to a terrestrial ecosystem and give necessary diagrams. [1+3+4]

11. Draw a well labelled diagram of a eukaryotic cell. Enlist two important features of such type of cells. Describe the structure and function of a major cell organelle that is common to both plant and animal cell. [3+1+2.5+1.5]

Part: II (Zoology)

Group 'A'

[6×1=6]

Rewrite the correct option of each question in your answer sheet.

12. One of the following is the branch of biology which deals with the study of different functions of different parts of an organism. It is
 a. physiology b. phenology c. anatomy d. histology
13. Primordial soup refers to
 a. protobiont b. hot water with biomolecules c. coacervates d. hot water with primitive cells
14. Flatworms are
 a. acoelomate b. pseudocoelomate c. true coelomate d. diploblastic
15. In the male reproductive system of frog, many seminiferous tubules unite to form thin, ciliated tubules vasa efferentia which then run inward and open into Bidder's canal. Bidder's canal is present in
 a. testis b. liver c. kidney d. seminal vesicle
16. Septal nephridia of earthworm are the largest nephridia that discharge the waste products. They are found in which segments?
 a. 4th, 5th and 6th segment b. Behind 15th segment c. behind 14th segment d. clitellar segment
17. Which of the following animal shows active volant adaptation?
 a. Flying fish b. Flying frog c. Flying lizard d. Bat

Group 'B'

[4 × 4 =16]

18. Give the meaning of embryology and explain how the evidences from embryology speak in favour of organic evolution.

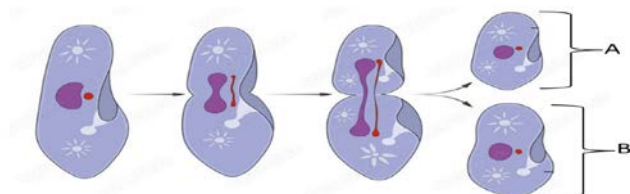
OR

Give the meaning of wildlife and justify the importance of wildlife.

[1+3]

19. Study the given diagram and answers the following questions. [1+3]

a. Label the parts A and B



- b. Explain the given diagram with the help of well labelled diagram.
20. Give some of the important characters of class reptilia with examples. [3+1]
21. Define reflex action. Describe the mechanism of reflex arc with diagram. [1+2+1]

Group 'C'

[2×8 = 16]

22. Define evolution. Explain the theory of Natural Selection with example. [1+5+2]
23. Give the meaning of anatomy and describe the anatomy of frog's heart with labelled diagrams. [1+4+3]

OR

What is digestion? Describe the alimentary canal of earthworm with diagram.

[1+4+3]

Send - Up Examination – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: D

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Part: I (Botany)

Group 'A'

[5×1=5]

Rewrite the correct option of each question in your answer sheet.

- Which one of the following is the most significant phase in meiotic cell division?
a. Prophase I b. Metaphase I c. Anaphase I d. Telophase I
- The chemical differences between DNA and RNA lie in
a. Types of Pentose sugar b. Nitrogen bases c. Phosphodiester bond d. a and b
- One of the following features is not true for Liliaceae, the Lily family.
a. Most members are perennial herbs. b. Flowers are bisexual and trimerous.
c. No distinction between calyx and corolla. d. Placentation marginal.
- are considered as the borderline between the living organisms and nonliving things.
a. Bacteria b. Lichens c. Blue green algae d. Viruses
- One of the following is not a type of in-situ conservation.
a. National parks b. Wildlife reserve c. Seed bank d. All of above

Group 'B'

[4 × 4 =16]

- Nucleic acids are of two types. What are they? How do you differentiate them? [1+3]
- Identify and label the following diagram. Also explain in brief. [2+2]



- Name different types of cell division. Explain the most primitive type of cell division with diagrams. [1+3]

OR

Light is an important eco-factor and plays significant role in species composition? Justify the statement giving reasons.

- What do you mean by binomial nomenclature? Explain it with rules of naming an organism. Give two examples on its basis. [1+2+1]

Group 'C'

[2×8 = 16]

- What do you mean by alternation of generations? Discuss it in reference to life cycle of a Bryophyte you have studied. [1+3+4]

OR

Write the distinguishing features of the family Solanaceae with necessary diagrams. Give its floral formula and floral diagram. Also mention botanical names of any four plants of this family along with their importance. [3+1+2+2]

11. Why is mitosis division called indirect and equational cell division? Describe the process with necessary diagrams. Also mention two important significances of this type of division. [1+3+3+1]

Part: II (Zoology)

Group 'A'

[6×1=6]

Rewrite the correct option of each question in your answer sheet.

12. Study of inter-relationships between living organisms and their environment is called
 a. evolution b. ecology c. ethology d. embryology
13. Primordial soup refers to
 a. protobiont b. hot water with biomolecules c. coacervates d. hot water with primitive cells
14. Which of the following has open circulatory system?
 a. Bee b. *Pheretima* c. Frog d. Human
15. Which of the following stage of Plasmodium escapes digestion in the gut of mosquito?
 a. Sporozoite b. Trophozoite c. Merozoite d. Gametocyte
16. Nephridiopores are the opening through which metabolic wastes are passed outside. They are the openings of
 a. septalnephridia b. integumentarynephridia c. pharyngealnephridia d. coelom
17. Prehensile tail is found in?
 a. Wall lizard b. Dog c. Squirrel d. Chameleon

Group 'B'

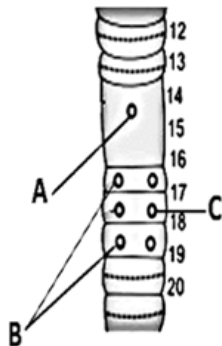
[4 × 4 =16]

18. Explain how the evidences from biochemistry support organic evolution.

OR

Define conservation and explain how the declining wildlife could be conserved.

19. Study the figure and answer the following questions. [1+1+1+1]



- a. Label the parts A, B and C
 b. What is released out from aperture A?
 c. What happens when secretions from A and C are fused?
 d. Name the part which is formed by a combination of 14th, 15th and 16th segments.
20. Give the important characters of phylum platy helminthes with examples. [3+1]
21. Air pollution is one of the major problems in a city like Kathmandu. Write down the major causes and consequences of air pollution in Kathmandu. [2+2]

Group 'C'

[2×8 = 16]

22. Define evolution. Explain the evolution of human starting from Australopithecus. [1+7]
23. Define conjugation. Explain the process of conjugation in *Paramecium* with diagrams. [1+4+3]

OR

What do you mean by portal system? Describe the renal and hepatic portal system of frog with necessary diagrams. [1+4+3]

Send - Up Examination – 2082

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Part I (Botany)

Group 'A'

Rewrite the correct option of each question in your answer sheet. [5×1=5]

1. Polysaccharides are formed by
 - a. glycosidic linkages
 - b. peptide linkage
 - c. phosphor-diester linkages
 - d. vanderwaal forces
2. Cellwall material of Bacteria is
 - a. cellulose
 - b. murein
 - c. chtin
 - d. lignin
3. Following is the typical inflorescence of the family Brassicaceae. This is called



- a. raceme
 - b. cymose
 - c. umbel
 - d. none of above
4. The branch of biology that dealing with the study of Algae is called?
 - a. Mycology
 - b. Agronomy
 - c. Pathology
 - d. Phycology
5. Which statement is correct with respect to the food chain?
 - a. Every component of the food chain forms a trophic level
 - b. Inter-relation between different food chains is known as a food web.
 - c. All the chains formed by nutritional relations is used to understand energy flow.
 - d. All of the above.

Group 'B'

[4×4=16]

6. Following is the floral formula of an Angiospermic family you have studied. Answer the following questions. [2+2]



- a. Explain the formula in semi-technical terms.
 - b. Name the family and give botanical names of two plants belonging to the family
7. Compare, with appropriate diagrams, the male and female reproductive structures of a Gymnosperm you have studied. [2+2]

8. Viruses are borderline entities between the non-living things and the living organisms. Justify the statement. [4]

OR

Conservation of forests is an important step to maintain species diversity. What do you mean by conservation? List out various steps for conservation of forest resources. [4]

9. What are ecological factors? Discuss the light as an important eco-factor. [1+3]

Group 'C'

[2×8=16]

10. State the distinguishing characteristics of the family Solanaceae with its floral formula and floral diagram. Write botanical names of any two plants regarding medicinal and edible importance. [4+2+2]

OR

Why is alternation of generations important in life cycle of higher plants? Explain it with reference to the life cycle of a bryophyte you have studied. [1+3+4]

11. Draw a well labelled diagram of a eukaryotic cell. Describe the structure and function of a major cell organelle found only in plant cells. [3+5]

Part II (Zoology)

Group 'A'

Rewrite the correct option of each question in your answer sheet. [6×1=6]

12. The conservation of biological resources within their natural ecosystems is known as
a. ex – situ conservation b. ecosystem conservation
c. in-situ conservation d. biological conservation
13. Rheotaxis is related with _____
a. touch b. light c. chemical d. flow of water
14. Which of the following statement is not true about heart of frog?
a. 2 auricles 1 ventricle are present
b. There is single circulation
c. Sinus venosus opens in right auricle
d. Truncus arteriosus transports blood to different body parts
15. Which one of the following stages of *Plasmodium vivax* is not formed in mosquito?
a. Oocyst b. Sporozoites c. Ookinete d. Trophozoite
16. In *Paramecium*, genetic information is stored in _____
a. micronucleus b. macronucleus c. cytophyge d. mitochondria
17. While moving towards the smell of food source, the organism *Dugesia* move by side-to-side wavering of its head. This movement is
a. tropotaxis b. telotaxis c. menotaxis d. klinotaxis

Group 'B'

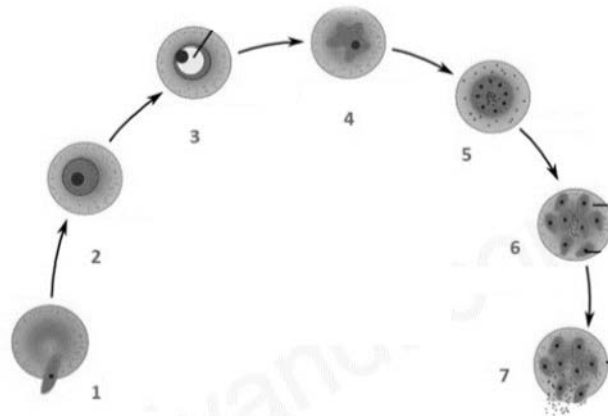
[4×4=16]

18. Explain in short how evolution takes place according to Darwin. Also explain about his postulate 'struggle for existence'. [1+3]

OR

Write the meaning of adaptation and mention the adaptational features of fish. [1+3]

19. What type of organisms is kept in phylum chordata. Also explain the important characters of class mammalia with examples. [1+3]
20. Describe this figure of erythrocytic schizogony of *Plasmodium* with labelled diagram. [3+1]



21. Water pollution is one of the major problems in a city like Kathmandu. Write down the major causes and consequences of water pollution in Kathmandu. [2+2]

Group 'C' [2×8=16]

22. What do you mean by myogenic heart? Describe the internal structure of heart of *Rana tigrina* with diagram. [1+4+3]

OR

Define reproduction. Describe the male reproductive system of *Pheretima posthuma* with labelled diagram. [1+4+3]

23. Explain in detail how origin of life on earth has occurred according to Oparin and Haldane. Why it is mostly accepted among scientific community? [6+2]

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Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions

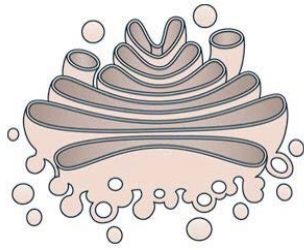
Part I (Botany)

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[5×1=5]

- Which of the following is not a carbohydrate?
 - Insulin
 - Dextrin
 - Starch
 - Amines
- What does nucleolus in a plant cell synthesize?
 - r - RNAs
 - DNA
 - t - RNA
 - m- RNA
- Given diagram is an important cell organelle of eukaryotic cells, and it is

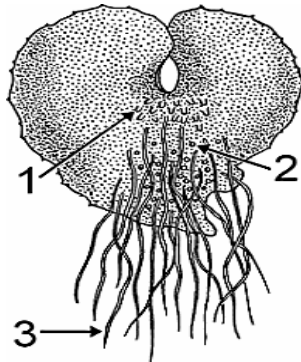


- a. mitochondria b. endoplasmic reticulum c. Golgi body d. lysosome
4. Edible mushroom *Agaricus* belongs to which class?
 a. Oomycetes b. Basidiomycetes c. Zygomycetes d. Ascomycetes
5. Where are the sori found in ferns?
 a. Abaxial side of trophophylls b. Adaxial side of trophophylls
 c. Abaxial side of sporophylls d. Adaxial side of sporophylls

Group 'B'

[4× 4=16]

6. What do you mean by ecological imbalances? Name some of them. Narrate an account of a major ecological imbalance. [1+1+2]
7. Proteins are polymers of amino acids. Explain how amino acids are linked together in protein. [2+2]
8. Observe the following diagram and answer the following questions. [2+1+1]



- a. Identify the diagram, the stage of life cycle and the organism.
 b. Label 1, 2 and 3.
 c. Mention one function of each.

OR

What do you mean by domain? Differentiate three domains of life regarding cellular organization. [1+3]

9. *Lichens* are dual organisms. What does it mean? Discuss the morphological types of lichens with examples in each. [1+2+1]

Group 'C'

[2 × 8=16]

10. State the distinguishing characteristics of the family Fabaceae with its floral formula and floral diagram. Write botanical names of any two plants regarding medicinal and edible importance. [4+2+2]

OR

State two important features of fungi. Why is sexual reproduction important in their life cycle? Explain with diagram the sexual reproduction in *Mucor*. [1+1+6]

11. Both mitosis and meiosis are indirect cell divisions. How do you agree? Explain in detail the one that occurs in vegetative cells. Draw the necessary diagrams. [1+4+3]

Part II (Zoology)

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[6×1=6]

12. Which one of the following pollutants causes acid rain?
a. CO₂ and NH₃ b. CO and NH₃ c. NO₂ and SO₂ d. NO₂ and NH₃
13. Name the branch of biology that deals with the study of animals that live and subsist on other animals.
a. Pathology b. Ecology c. Parasitology d. Taxonomy
14. Which of the following is the "**Golden age of reptiles**"?
a. Palaeozoic b. Proterozoic c. Coenozoic d. Mesozoic
15. On what basis, the phylum Annelida is classified
a. Shape of the body b. Sense organ c. Locomotory organ d. Clitellum position
16. In *Plasmodium*, Schuffener's dots are seen. What do these dots represent?
a. Antigen b. Antibodies c. Hormones d. Reserve food
17. Choose among the following, the main reason for extinction of species:
a. Hunting b. Destruction of habitatc. Pollution d. None of these

Group 'B'

[4×4 = 16]

18. Write the meaning of evolution and explain how analogous and vestigial organs support organic evolution. [1+3]

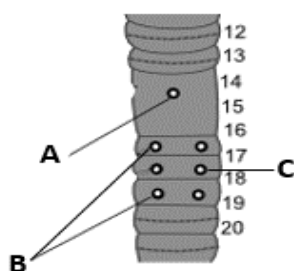
OR

Define conservation and explain how the declining wildlife could be conserved. [1+3]

19. *Paramecium* belongs to class Ciliata of phylum Protozoa. Explain why it is kept in that particular class and phylum. [2+2]

20. The given diagram represents some openings of earthworm. Answer the questions related to the figure.

- a. Label A, B and C. [1]
b. Name the secretions from A and C. [1]
c. What is secreted from B and what is the function of it? [2]



21. Define reflex action with example. Describe the mechanism of reflex action with diagram. [1+3]

Group 'C'

[2×8 = 16]

22. Define digestion. Also explain how carbohydrates, proteins and fats are digested in the alimentary canal of frog. [1+7]

OR

For *Plasmodium vivax*, female anopheles' mosquito is considered as primary host. Why is it called so? Also explain the life cycle of *Plasmodium* occurring in the body of mosquito with labelled diagram. [1+5+2]

23. Write about the modern synthetic theory of evolution of life. [8]

NEB Examination - 2019

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Section: I (Botany)

Group 'A'

[5×1=5]

Rewrite the correct option of each question in your answer sheet.

1. Gametophytes of *Marchantia* and *Pteris* resemble in having:

a. thalloid plant body	b. motile male gametes
c. fertilization that requires water	d. all of above
2. In-situ conservation is when species are conserved in:

a. national parks and conservation areas	b. wildlife reserves and biosphere reserves
c. botanical gardens and zoological gardens	d. (a) and (b)
3. Three domains of life are:

a. archaea, eubacteria and cyanobacteria	b. archaea, prokarya and eukarya
c. bacteria, prokarya and eukarya	d. none of above
4. Following chemicals are major constituents of acid rain.

a. H ₂ CO ₃ and HNO ₃	b. HNO ₃ and H ₂ SO ₄	c. H ₂ SO ₄ and HCl	d. HCl and HNO ₃
--	--	---	-----------------------------
5. Chromosomes appear beaded because of chromomeres during:

a. leptotene	b. diplotene	c. pachytene	d. interphase
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Group 'B'

[4 × 4 =16]

Give short answers to the following questions:

6. Proteins are important biomolecules. Discuss their biological significance. 4
7. Compare the sporophytes of a Bryophyte and a Pteridophyte you have studied. [2+2]

OR

8. Elaborate the concept of ex-situ and in-situ conservation. [2+2]
8. Study the diagram and answer the questions below: [2+2]
 - a. Identify the labels.
 - b. Name the structure and the organism having this structure.



9. What do you mean by inflorescence? Discuss different types of inflorescences found in Angiospermic families you have studied. [1+3]

Group 'C'

[2×8 = 16]

Give long answer to the following questions:

10. Which features make a cell eukaryotic? Enlist the cell organelles found in a plant cell. Describe the structure and function of a major cell organelle found only in plant cells. [2+1+ 5]

11. Describe the life cycle of an Algae you have studied. [4+4]

OR

Define ecosystem. Describe the forest ecosystem in detail with necessary diagrams. [1+3+4]

Section: II ((Zoology)

Group 'A'

[6×1=6]

Rewrite the correct option of each question in your answer sheet.

- Which group of vertebrates comprises the highest number of endangered species?
a. Mammals b. Fishes c. Birds d. Reptiles
- Genetic variations arise by:
a. recombination b. chromosomal aberration c. mutation d. all of these
- Analogous organs are those which are:
a. structurally similar b. functionally similar c. both (a) and (b) d. normally non-functional
- Which of the following is responsible for the extinction of species?
a. Pollution of air and water b. Habitat destruction c. Hunting for flesh d. All of above
- Nephrostomes are found in:
a. only integumentary nephridia b. only pharyngeal nephridia
c. only septal nephridia d. integumentary and pharyngeal nephridia
- Study of behavior of animals is called:
a. sociology b. ecology c. ethology d. anthropology

Group 'B'

[4×4 = 16]

Give short answer to the following questions:

- Discuss how bony fishes differ from cartilaginous fishes. [2+2]
- Describe with suitable diagrams, how erythrocytic schizogony of the malarial parasite occurs in human liver. [2+2]

OR

Give an account of binary fission in *Paramecium*, with necessary diagrams. [2+2]

- Define pollution. Enlist some major pollutants of air in your home town and discuss their effects on human health. [1+3]
- Write a short note on migratory behavior of birds. 4

Group 'C'

[2×8 = 16]

Give long answer to the following questions:

- Give an account of evolution of modern man starting from Anthropoids. [8]
- What do you mean by digestion? Describe the digestive organs of *Pheretima posthuma*. [1+4+3]

OR

Describe the internal structure of frog heart and its working mechanism. [4+4]

NEB Examination - 2080

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Please complete at first section I (Botany) then section II (Zoology). Answer of each section should be separate in the separate answer sheet.

Attempt all questions.

Section: I (Botany)

Group 'A'

[5×1 = 5]

Rewrite the correct option of each question in your answer sheet.

- Prothallus of Pteridophytes are
 - sporophytes.
 - gametophytes.
 - vegetative body.
 - None of above.
- Enzymes are
 - bio-catalysts
 - proteinaceous substances
 - specific in action
 - all of above
- One of the following is a common edible fungus.
 - Rhizopus*
 - Mucor*
 - Agaricus*
 - Saccharomyces*
- In meiosis
 - both divisions are equational.
 - first division is reductional and second division is equational.
 - first division is equational and second division is reductional.
 - both divisions are reductional.
- Following gases are major constituents of greenhouse gases.
 - CO₂ and H₂O
 - CH₄
 - CFC
 - All of above

Group 'B'

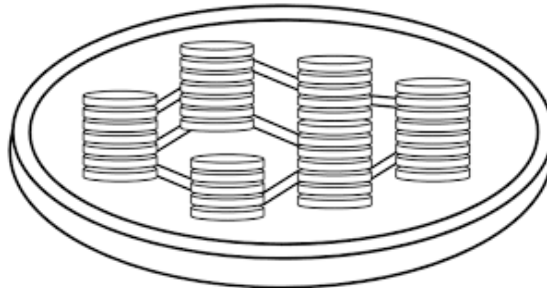
[4 × 4 =16]

- What is meant by inflorescence? Differentiate Racemose and Cymose inflorescences with examples. (1+2+1)
- Compare the sporophytes of a Bryophyte and a Pteridophyte you have studied. (2+2)

OR

Give diagrammatic representation of haplo-diplobiontic life cycle of yeast with an example. (No description required) (3+1)

- Observe the diagram of the cell organelle given below and answer the following questions.
 - Name the cell organelle, redraw and label the important parts. 2
 - Explain its occurrence and functions. 2



- Give two unique features of Viruses. Do you know that Viruses can be beneficial to us? Justify the statement with reasons. (1+3=4)

Group 'C'

[2×8 = 16]

- Describe the family Solanaceae in semi-technical terms with necessary diagrams. Give its floral formula and floral diagram. Also mention botanical names of any four plants of this family along with their importance. [4+1+2+1]

OR

Define ecosystem. Describe pond ecosystem in detail with necessary diagrams. [1+3+4]

11. Why is mitosis division called somatic cell division? Describe the process with necessary diagrams. Also mention two important significances of this type of division. [1+3+3+1]

Section: II ((Zoology)

Group 'A'

[6×1 = 6]

Rewrite the correct option of each question in your answer sheet.

1. Primordial soup refers to
a. protobiont b. hot water with biomolecules c. coacervatesd. hot water with primitive cells
2. Animals having long and hooked claws are adapted for ----- type of adaptation.
a. Volant b. arboreal c. fossorial d. cursorial
3. Both birds and bats fly in air. But bats differ from birds in having
a. wings b. 4-chambered heart c. diaphragm d. small brain
4. Largest national park of Nepal is ----- National Park.
a. Rara b. Chitwan c. Shey-phoksundo d. Sagarmatha
5. In frog, the heart is tri-chambered, and both auricles open into same ventricle through
a. auriculo-ventricular valve b. auriculo-ventricular aperture
c. SA-node d. VA-node
6. One of the following set of animals belong to the same class of a phylum.
a. Hydra, Jelly fish and cray fish b. Bat, pigeon and whale
c. Dolphin, shark and kangaroo d. Spider, scorpion and tick

Group 'B'

[4×4 = 16]

7. What do you mean by connecting links in evolution? Discuss one that suggests that the birds might have been evolved from reptiles. (1+2+1)
8. Define endangered, rare and vulnerable species. Give scientific names of any two endangered species of Nepal. (3+1)

OR

How many types of pollution do you know? Explain the major sources of air pollution and types of pollutants causing it in your home town. (1+2+1)

9. Draw a well labeled of the organism called as slipper animalcule. (No description required). Also give its systematic position. (2+2)
10. What do you mean by digenetic life cycle of the malarial parasite? Discuss the part of life cycle that takes place in human liver. (1+2+1)

Group 'C'

[2×8 = 16]

11. Define evolution. Mention the important theories of evolution of life on the earth. Describe the theory of Natural Selection with examples. [1+1.5+5.5]
12. What do you mean by anatomy? Describe with a well labelled diagram the alimentary canal of a frog. Also give function of each part. [1+4+3]

OR

Discuss the habit, habitat, morphology and external apertures of an earthworm with necessary diagrams. [2+4+2]

NEB Examination - 2081

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Please complete at first section I (Botany) then section II (Zoology). Answer of each section should be separate in the separate answer sheet.

Attempt all questions.

Part: I (Botany)

Group 'A'

Rewrite the correct option of each question in your answer sheet.

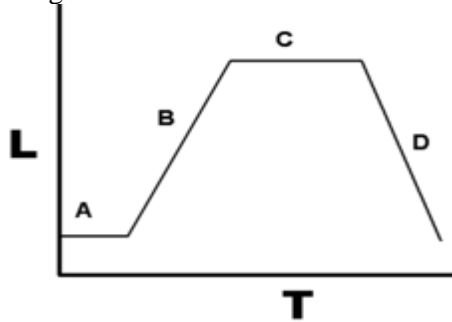
[5×1=5]

1. **One of the following is not a type of plastid.**
a. Chloroplast b. Chromoplast c. Leucoplast d. Phragmoplast
2. **The chemical bond present in nucleic acids to join monomeric components is bond.**
a. phosphodiester b. peptide c. glycosidic d. hydrogen
3. **Which one of the following belongs to Fabaceae family?**
a. Peanut b. Radish c. Potato d. Garlic
4. **Three domain system of taxonomy was proposed by**
a. Whitaker b. Carolus Linnaeus c. Carl Woese d. None of above
5. **One of the following is not a type of in-situ conservation.**
a. National park d. Wildlife reserve c. Seed bank d. Conservation area

Group 'B'

[4 × 4 =16]

24. Nucleic acids are of two types. What are they? How do you differentiate them? [1+3]
25. Identify, redraw and label the given figure. [1+1+2]



26. What are two main features of algae? Describe the structure of *Spirogyra* with necessary diagrams. [1+3]

OR

Give diagrammatic representation of haplo-diplobiontic life cycle of *Yeast* with example. (No description is required) [3+1]

27. What do you mean by succession? Mention different stages in general process of succession. [1+3]

Group 'C'

[2×8 = 16]

28. Describe the family Cruciferae in semi technical terms with necessary diagrams, floral formula and floral diagram. Name any four economically important plants belonging to it. [4+1+1+2]

OR

What do you mean by alternation of generation? Discuss it with reference to the life cycle of a Bryophyte you have studied. [1+3+4]

11. Why mitosis is called indirect and equational cell division? Describe the process with necessary diagrams. Also mention two important significances of it [1+3+3+1]

Part II (Zoology)

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[6×1=6]

12. **The super class Pisces consists of all fish. The study of fish comes under**
a. pisciology b. ichthyology c. herpetology d. ornithology
13. **The cranial capacity of Java ape man was about**
a. 560cc b. 1000cc c. 1300cc d. 900cc
14. **Cilia are the locomotory structures present in *Paramecium*. Each cilium develops from**
a. Pellicle b. Trichocyst c. Ectoplasm d. Basal granule
15. **In the male reproductive system of frog, many seminiferous tubules unite to form thin, ciliated tubules vasa efferentia which then run inward and open into Bidder's canal. Bidder's canal is present in**
a. Testis b. Liver c. Kidney d. Seminal vesicle
16. ***Ascaris* is**
a. True coelomate b. Haemocoelomate c. Pseudocoelomate d. Acoelomate
17. **Prehensile tail is found in**
a. Wall lizard b. Dog c. Squirrel d. Chameleon

Group 'B'

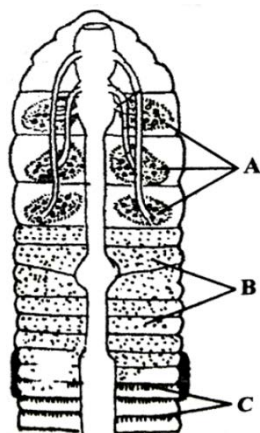
[4×4 = 16]

18. Give the meaning of vestigial and atavistic organs with examples and also explain the justification of presence of such organs. [3+1]

OR

Give the meaning of wildlife and justify the importance of wildlife and list major threats. [1+2+1]

19. Study the given diagram and answer the following questions. [1+2+1]



- a. Label A, B and C.
b. Write about the location of these parts A, B and C.
c. Explain why C is also called enteronephric nephridia?
20. Give some of the important characters of class reptilia with examples. [3+1]
21. Define reflex action. Describe the mechanism of reflex arc with diagram. [1+2+1]

Group 'C'

[2×8 = 16]

22. Define evolution. Explain the theory of Natural Selection with example. [1+5+2]
23. Give the meaning of digestion. Describe with labelled diagram of the alimentary canal *Rana tigrina*. [1+4+3]

OR

Explain why human is considered as secondary host for *Plasmodium vivax*. Also describe the life cycle of *Plasmodium* in human host with necessary diagrams. [1+4+3]

NEB Examination - 2082

Time: 3 hrs.

F.M.: 75

P.M.: 27

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

**Part: I (Botany)
Group 'A'**

Rewrite the correct option of each question in your answer sheet.

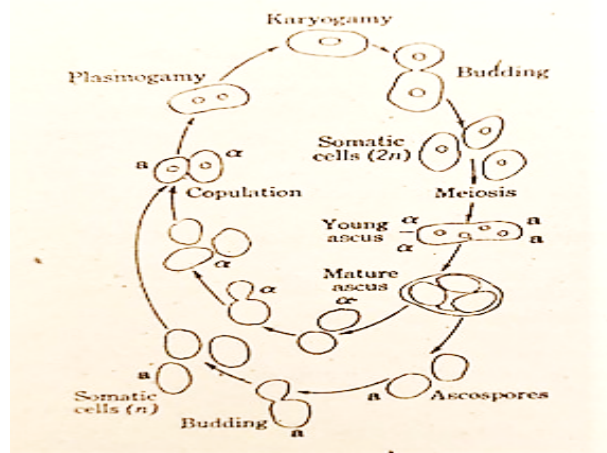
[5×1=5]

- Lysosomes originate from vesicles of Golgi Bodies and are concerned with
 - extra cellular digestion
 - intra cellular digestion
 - break down of fats and lipids
 - Both a and b
- One of the following groups of plants does not belong to the same Angiospermic family
 - Potato, tomato and brinjal
 - Onion, garlic and ginger
 - Pea, peanuts and gram
 - Mustard, radish and turnip
- Viruses are essentially composed of
 - Proteins, lipids and nucleic acids
 - Proteins and nucleic acids
 - Proteins, nucleic acids and carbohydrates
 - Proteins, lipids and carbohydrates
- Most recent model of cell membranes proposed by Singer and Nicholson (1972) is the fluid mosaic model. This model believes that it has
 - Proteins on both outer and inner surfaces
 - Proteins on the outer surface only
 - Proteins integrated with lipids
 - Some proteins on surfaces and some integrated with lipids
- One of the important ecological imbalances is acid rain. Following acids are responsible for acid rain.
 - H₂SO₄ and HCl
 - H₂SO₄ and H₂CO₃
 - H₂SO₄ and HNO₃
 - H₂SO₃ and HCl

Group 'B'

[4 × 4 =16]

- Metaphase of mitosis differs from metaphase I of meiosis in one essential way. Describe the difference and explain how it affects the daughter cell. [2+2]
- The following diagram is one of the three types of life cycle of yeast. Answer the following questions. [2+2]



- a) Name the type of life cycle and the species of yeast that exhibits it.
 b) Describe the diagram in brief.
8. Lichens have important role in succession as they act as pioneers in colonizing barren areas and they have many other roles. Discuss them with examples wherever necessary. 4
9. Differentiate green algae, red algae and brown algae based on pigments and reserve food **only**. Describe the structure of a green algae of your choice. Give the necessary diagrams to support your answer. [2+2]

OR

What are producers in an ecosystem? Pond ecosystem exhibits a variety of producers. Discuss in detail with examples. 4

Group 'C'

[2×8 = 16]

10. Which features identify a eukaryotic cell? Mention two most important features only. Draw a well labelled diagram of a eukaryotic cell and describe the structure and function of a major cell organelle, common to both plant and animal cell. [1+3+4]
11. Give diagnostic features of the family Solanaceae in semi technical terms with all necessary diagrams, floral formula and floral diagram and mention any two plants of the family that you use almost daily in your kitchen. Give their common names, scientific names and uses. [3+2+1+2]

OR

All bryophytes exhibit distinct alternation of generations in their life cycle. Describe it with reference to the lifecycle of a bryophyte you have studied.

Part II (Zoology)

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[6×1=6]

12. Development of patagia in animals is adaptation.
 a) volant b) arboreal c) aquatic d) cave
13. World Environment Day falls on
 a) 21st March b) 5th June c) 4th October d) 3rd December
14. Choose the **incorrect** match from the following pairs.
 a) Archaeopteryx - Connecting link between birds and reptiles
 b) Malacology - Study of shells of Molluscs
 c) Micronucleus - responsible for reproduction
 d) Mouth in earthworm - Prostomium
15. DDT is considered harmful and now banned in many countries because it is
 a) an organochlorine compound b) easily available pesticide
 c) non degradable d) degradable
16. Protected area but allows the people for legal hunting wildlife is
 a) Chitwan national park b) Annapurna conservation area
 c) Dhorpatan hunting reserve d) Koshi Tappu wildlife reserve
17. One of the following is actually a fish and belongs to Pisces.
 a) Silver fish b) Jelly fish c) Cat fish d) Star fish

Group 'B'

[4×4 = 16]

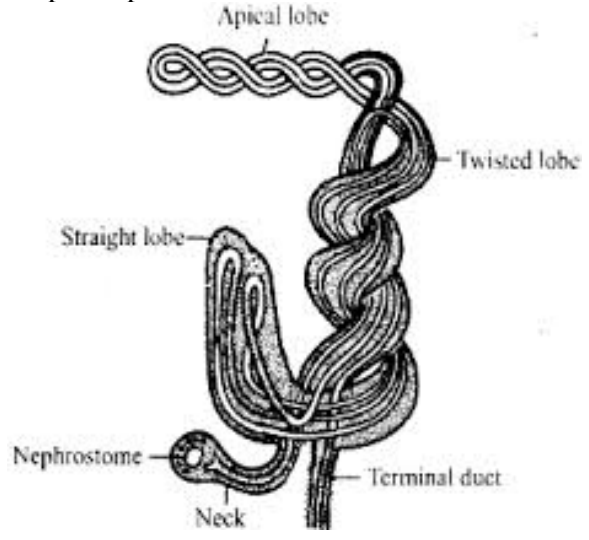
18. Malarial parasite is a dimorphic and digenetic parasite. Elaborate on this statement. Illustrate the sexual lifecycle of the parasite after the female Anopheles mosquito bites the infected human. (*no description required*)

OR

Wildlife is a very precious resource. But despite being renewable, wildlife is getting badly depleted. What are the main causes of depletion of wildlife? 4

19. State the hypothesis of Oparin and Haldane about the primeval condition of the earth. What do you understand by Halden's hot dilute soup? State its significance. [2+1+1]

20. The following diagram is the septal nephridia of earthworm. Answer the following questions. [1+1+2]



- a) How many septal nephridia are found in each segment?
 - b) Name other types of nephridia.
 - c) Which body part of earthworm is called 'forest of nephridia' and why?
21. What do you mean by migration of birds? Name the migratory birds that are observed in Nepal every year? Discuss the types and causes of migration. [1+1+2]

Group 'C' **[2×8 = 16]**

22. The gradual and orderly change from one condition to another is known as evolution. Explain how the evolution of organisms takes place according to New Darwinism. [1+1+6]
23. What is the most important difference between amphibian heart and mammalian heart and how does it affect in function? Describe the external structure of the frog's heart with a well labelled diagram. [1+1+6]

OR

Which animal is called '**slipper animalcule**'? Give its systematic position. It reproduces sexually by conjugation. Describe the process in detail. Draw necessary diagrams to substantiate your answer. [1+2+5]

First Term Examination – I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

1. Who is known as the 'First Programmer' in the history of computer science?
a) Lady Augusta Ada b) Charles Babbage c) John Von Neumann d) Dennis Ritchie
2. Which logic gate of Boolean algebra is represented by the function, $F = A \cdot B' + A' \cdot B$?
a) NAND b) NO c) XNOR d) XOR
3. Which of the following is used as a newline character?
a) \n b) /n c) /new d) \new
4. Which is the 2's complement of 11001?
a) 11001 b) 00111 c) 00110 d) 00100
5. What is the octal equivalent of binary number 110011?
a) 63 b) 73 c) 83 d) 53
6. The device invented by Blaise Pascal to help his father for accounting was:
a) Pascaline b) UNIVAC c) Slide Rule d) ENIAC
7. Which is the major component of third generation computers?
a) IC b) Vacuum tube c) Transistor d) Resistor
8. _____ Computer is more portable and operated by the use of a microprocessor as its major component.
a) Super b) Mainframe c) Mini d) Micro
9. In a C program, which symbol performs division between any two numbers and returns the quotient?
a) / b) % c) & d) #
10. The format specifier which stores floating point values or decimal data in a variable is _____.
a) % d b) %f c) %c d) %s
11. Which number system uses 8 digits for calculation?
a) Hexa-decimal b) Binary c) Octal d) Decimal

Group 'B'

[8×5=40]

12. What is computer? Mention its advantages and disadvantages.
13. Write a program to enter your age and check whether you are eligible for voting or not. (Voting age: 18 years or older)
14. Subtract 11001 from 11110 using 1's and 2's complement methods.
15. Distinguish between first and second generation computers.
16. Write a C program to enter the coordinates of any two points and calculate the distance between them.
17. Convert:
a) $(97.35)_{10} \rightarrow (?)_2$
b) $(BCA)_{16} \rightarrow (?)_{10}$
18. Explain the types of computer classified on the basis of size.
19. Prove De-Morgan's theorem.

Group 'C'

[3×8=24]

20. Describe AND, OR and NAND gates of Boolean algebra along with their logic symbol, truth table and venn-diagram.
21. Write a C program to enter an alphabet from the keyboard and check whether it is a vowel sound or consonant sound using switch case statement.
22. What are the application areas of a computer? Explain.

First Term Examination – II

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

1. Who is known as 'Father of C programming'?
a) Charles Babbage b) John Von Neumann c) Lady Augusta Ada d) Dennis Ritchie
2. Which of the following gate is represented by the logic function, $F = A + B$?
a) NAND b) NOR c) AND d) OR
3. In a C program, _____ is used to give a horizontal tab space for displaying the output?
a) \htab b) \t c) \n d) \hzt
4. What is the 1's complement of 11001100?
a) 11001100 b) 00110011 c) 00100100 d) 00110100
5. What is the decimal equivalent of the binary number 11001?
a) 25 b) 52 c) 27 d) 72
6. The device invented by William Oughtred in 1622 AD was:
a) Pascaline b) Abacus c) Slide Rule d) ENIAC
7. _____ was the major component used in first generation computers.
a) Resistor b) Vacuum Tube c) IC d) Capacitor
8. _____ Computer is the fastest, largest and most expensive digital computer.
a) Super b) Mainframe c) Mini d) Micro
9. Which of the following symbol divides any two numbers and returns the remainder?
a) / b) % c) & d) #
10. The format specifier which stores string data in a variable is _____.
a) %d b) %f c) %c d) %s
11. Which is the non-positional number system?
a) Roman b) Binary c) Hexa-decimal d) Octal

Group 'B'

[8×5=40]

12. A computer is known as versatile machine, why? Enlist the limitations of a computer.
13. Write a C program to enter a number and check whether it is negative, positive or zero.
14. What are the types of computer classified on the basis of size? Describe in short.
15. Write about any five application areas in which computers can be used.
16. Subtract 110011 from 111100 using 1's and 2's complement methods.
17. Write a C program to enter time in minutes and convert it into hours and minutes.
18. Convert:
a) $(67.625)_{10} \rightarrow (?)_2$
b) $(BBA)_{16} \rightarrow (?)_{10}$
19. Prove the Associative law of Boolean algebra.

Group 'C'

[3×8=24]

20. Describe NAND, NOR and OR gates of Boolean algebra along with their logic symbol, truth table and venn-diagram.
21. Write a C program to enter the month number and find the total number of days in that month using switch case statement.
22. What do you understand by the term 'generation of computer'? Explain the main features of any three generations of computer.

First Term Examination – III

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Attempt all questions.

Group 'A'

[11×1=11]

Rewrite the correct option of each question in your answer sheet.

1. Who is known as the 'Father of C Programming'?
a) Lady Augusta Ada b) Charles Babbage c) John Von Neumann d) Dennis Ritchie
 2. Which is the major component of fourth generation computers?
Transistor b) Microprocessor c) Vacuum Tube d) IC
 3. Which of the following is used as a newline character?
a) \n b) /n c) /new d) \nl
 4. What is the decimal equivalent of a binary number 10101?
a) 31 b) 41 c) 21 d) 22
 5. Which logic gate is represented by the Boolean function: $F = (A.B)'$?
a) NAND b) NOR c) XOR d) XNOR
 6. The characteristic feature of a computer by which it can work for hours or even days without getting tired or bored is termed as:
a) Speed b) Accuracy c) Diligence d) Automatic
 7. Operator % in C language is called _____.
a) Percentage operator b) Quotient operator c) Modulus operator d) Addition operator
 8. _____ loop executes the block of codes at least once.
a) while b) for c) do-while d) all of them
 9. Microsecond is the operating speed of _____ generation computers.
a) First b) Second c) Third d) Fourth
 10. Which symbol is equivalent to the 'Logical OR' operator in C?
a) || b) && c) != d) <>
- b) A computer language that is written in binary codes only is called:
a) High LL b) Machine LL c) C++ d) None

Group 'B'

[8×5=40]

- b) What is computer? Describe any 4 characteristics of computer in brief. [1+4]
- c) Write a C program to display the greatest among three numbers. [5]
- d) Subtract 10011 from 11110 using 1's and 2's complement methods. [2.5+2.5]
- e) Distinguish between third and fourth generation computers. [5]
- f) Write a C program to find the volume and TSA of a cuboid. [5]
- g) Convert: [2×2.5=5]
c) $(128)_{10} \rightarrow (?)_2$
d) $(BCA)_{16} \rightarrow (?)_{10}$
- h) What is a programming language? Briefly describe about Machine level and Assembly level language. [5]
- i) State and prove 'Associative Law'. [2.5+2.5]

Group 'C'

[3×8=24]

- j) Describe AND, OR and XOR gates of Boolean algebra along with their logic symbol, truth table and Venn-diagram. [8]
- k) Write a C program to enter an alphabet and check whether it is a vowel sound or consonant sound using switch-case statement. [8]
- l) What is the syntax of while loop? Write a C program that asks to input a number from user and determines whether the number is Palindrome or not. [1+7]

First Term Examination – IV

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Group 'A'

[11×1=11]

Rewrite the correct option of each question in your answer sheet.

1. Who developed Boolean Algebra?
a) Charles Babbage b) Lady Augusta c) George Boole d) Dennis Ritchie
2. What is the major component used in third generation computers?
a) Transistor b) Vacuum Tube c) ULSI d) IC
3. In a C program, the operator ' / ' is used as:
a) Percentage operator b) Modulus operator c) Quotient operator d) Addition operator
4. What is the binary equivalent of a decimal number '14'?
a) 1111 b) 111110 c) 1110 d) 11101
5. Which logic gate is represented by the Boolean function $F = (A+B)'$?
a) XOR b) NOR c) XNOR d) NAND
6. The characteristic feature of a computer by which it produces correct results and information for future use is termed as:
a) Speed b) Diligence c) Versatile d) Accuracy
7. Which function is used to take formatted input from the users?
a) printf() b) getchar() c) scanf() d) putchar()
8. Which of the following loop is also called exit-control loop?
a) do-while b) while c) for d) None
9. Which generation computers used to have nanosecond speed?
a) first b) second c) third d) fourth
10. Which symbol is equivalent to the 'Logical AND' operator in C?
a) || b) && c) != d) < >
11. _____ is the translator used to translate HLL codes into machine language one line at a time.
a) Assembler b) Compiler c) Debugger d) Interpreter

Group 'B'

[8×5=40]

12. Enlist and explain shortly about any five application areas of computer. [5]
13. Write a C program to enter a number and check whether it is negative, positive or zero. [5]
14. Subtract 110011 from 111100 using 1's and 2's complement methods. [2.5+2.5]
15. Distinguish between second and third generation computers. [5]
16. Write a C program to find area and perimeter of a rectangle. [5]
17. Convert: [2×2.5=5]
a) $(256)_{10} \rightarrow (?)_2$
b) $(BBA)_{16} \rightarrow (?)_{10}$
18. Define programming language. Also, describe Assembly level and High level language in short. [1+2+2]
19. State and prove the 'Distributive Law'. [2.5+2.5]

Group 'C'

[3×8=24]

20. Describe NOT, NAND and OR gates of Boolean algebra along with their logic symbol, truth table and Venn-diagram. [8]
21. Write a C program to enter the month-number (1-12) and find the total number of days in that month using switch case statement. [8]
22. What is the syntax of do-while loop? Write a C program that asks to input a number from the user and determine whether it is an Armstrong number or not. [1+7]

Second Term Examination – I

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

- Which of the following is a default function of C programming used to display message or output on the screen?
a) return (0) b) exit (0) ; c) printf () d) scanf () ;
- The logic function $F = (A.B)'$ represents _____ gate.
a) NAND b) NOR c) XNOR d) XOR
- Which of the following loop is known as exit-control loop?
a) for b) while c) do-while d) none
- The software which is installed permanently in ROM is called:
a) Spyware b) Malware c) Firmware d) Program
- _____ is the string function that concatenates any two strings.
a) strcpy () b) strcmp () c) strlen () d) strcat ()
- Which of the following is an example of flash memory?
a) Pen drive b) DVD-RW c) Hard disk d) CD-ROM
- Which is the type of **bus** responsible for carrying memory address within the device?
a) Data b) Address c) Memory d) Control
- Which of the following is an example of one-dimensional array?
a) arr[2][3] b) arr[3][3] c) arr[2][2] d) arr [100]
- Which is the 1's complement of 111011?
a) 100100 b) 000100 c) 111100 d) 000101
- Which of the following is the major component used in third generation computers?
a) IC b) Transisto c) Diodes d) VLSIC
- In which generation, Keyboard and Monitor were introduced as input/output devices?
a) First b) Second c) Third d) Fourth

Group 'B'

[8×5=40]

- Mention the differences between first and second generation computers. [5]
- Write a C program to enter a number and check whether it is palindrome or not. [5]
- Subtract 1001 from 1111 using 1's and 2's complement methods. [2.5+2.5]
- Distinguish between RAM and ROM. [5]
- Explain in brief about the different types of bus in a computer system. [5]
- What is language translator? Compare and contrast between interpreter and compiler. [1+4]
- Explain the types of computer classified on the basis of size. [5]
- What is the syntax of while loop? Write a C program to enter a number and display its multiplication table. [1+4]

Group 'C'

[3×8=24]

- What is logic gate? Which gate is also called as an inverter? Explain AND, NAND and XOR gates along with the logic symbol, truth table and Venn-diagram of each. [1+1+6]
- How do you declare a two-dimensional array? Write a C program to enter any two matrices of 3×3 size and find their sum. [1+7]
- What is computer architecture? Explain the components of computer architecture along with its block diagram. [1+3+4]

Second Term Examination – II

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Group 'A'

Rewrite the correct option of each question in your answer sheet.

[11×1=11]

- Which of the following is a default function of C programming used to take inputs from the user through keyboard?
a) Return (0) ; b) Exit (0) c) Printf() d) scanf () ;
- The logic function $F = (A+B)'$ represents _____ gate.
b) NAND b) NOR c) AND d) OR
- What type of loop checks the condition at the end of the loop?
b) for b) while c) do-while d) None
- What is the 1's complement of 110011?
a) 110011 b) 001100 c) 001001 d) 001101
- The data and programs which are currently being processed or used by the CPU are stored in _____.
b) RAM b) ROM c) Hard disk d) None
- _____ is the string function used to find length of characters in a text.
a) strcpy () b) strcmp () c) strcmp () d) strlen ()
- _____ was the major component used in first generation computers.
b) Resistor b) Vacuum Tube c) IC d) Transistor
- Which is the type of bus responsible for carrying data from one location to another across the computer?
b) Data b) Address c) Memory d) Control
- Which of the following is an example of two-dimensional array?
a) Arr [100] b) Arr [50] c) Arr [2] [3] d) Arr [20]
- The operating speed of fourth generation computers is up to:
b) Millisecond b) Microsecond c) Nanosecond d) Picosecond
- _____ is an example of Optical Storage Media.
b) Pen drive b) DVD-RW c) Hard disk d) SSD

Group 'B'

[8×5=40]

- Compare and contrast between the second and third generation computers. [5]
- Write a C program to display the following series up to nth terms.
1 4 9 16 25 36 [5]
- What are the types of computer classified on the basis of working principle? Describe in short. [5]
- Write a C program to enter the base and height of a triangle and find its area. [5]
- Subtract 11001 from 11100 using 1's and 2's complement methods. [2.5+2.5]
- Write a C program to enter a number and find its factorial. [5]
- What is a microprocessor? Enlist the major functions performed by a microprocessor. [5]
- What is an algorithm? Write an algorithm to find the volume of a cuboid. [1+4]

Group 'C'

[3×8=24]

- Describe AND, XOR and OR gates of Boolean algebra along with their logic symbol, truth table and Venn-diagram. [8]
- What is the syntax of a two-dimensional array declaration? Write a C program to enter any two matrices of 2×3 size and find their difference. [1+7]
- Describe the different types of computer memory . [8]

Second Term Examination – III

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

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Group 'A'

[11×1=11]

Rewrite the correct option of each question in your answer sheet.

23. Analog Computer works on the supply of:
a) physical strength b) discrete signals c) magnetic strength d) continuous electric pulse
24. Which is the major component of first generation computers?
a) Transistor b) Microprocessor c) Vacuum Tube d) IC
25. A bar code reader is an example of device.
a) processing b) storage c) input d) output
26. What is the binary equivalent of a decimal number 21?
a) 10101 b) 10100 c) 11010 d) 01101
27. Which logic gate is represented by the Boolean function:
 $F = (A+B)'$?
a) NAND b) NOR c) XOR d) XNOR
28. If an input A is given to an inverter, its output will be:
a) A b) A+ c) A- d) A'
29. Operator % in C language is called _____.
a) percentage operator b) modulus operator
c) quotient operator d) addition operator
30. Which of the following is exit controlled loop.
a) while b) for c) do-while d) all of them
31. Which of the following function is used for string concatenation?
a) strrev() b) strcat() c) strcpy() d) strlen()
32. Which is the correct HTML tag for drawing horizontal line?
a) <hr> b)
 c) d) <h1>
33. Which of the following attribute is used for merging two rows?
a) rowmerge b) rowspan c) colmerge d) colspan

Group 'B'

[8×5=40]

34. What is super computer? Describe the types of computer on the basis of size. [1+4]
35. Write down the characteristics of fourth generation computer. [5]
36. Subtract 1011 from 10101 using 1's and 2's complement methods. [2.5+2.5]
37. State and prove 'De-Morgan's Theorem'. [2.5+2.5]
38. Write a program in C language to check whether the given number is palindrome or not. [5]
39. What is a language translator? Describe its types in detail. [1+4]
40. What is list in HTML? Describe ordered and unordered list with suitable example. [1+2+2]
41. What is CSS? Describe internal CSS with a suitable example. [5]

Group 'C'

[3×8=24]

42. Describe computer architecture with the help of a suitable diagram. [8]
43. Which gates are called universal gates and why? Describe all basic Boolean algebra gates along with their logic symbol, truth table and Venn-diagram. [2+6]
44. What is array? WAP to input the marks of 25 students and sort them in ascending order. [1+7]

Second Term Examination – IV

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Group 'A'

[11×1=11]

Rewrite the correct option of each question in your answer sheet.

1. A digital Computer works on the supply of:
a) physical strength b) discrete signals c) magnetic strength d) continuous electric pulse
2. Which is the major component of second generation computers?
a) Transistor b) Microprocessor c) Vacuum Tube d) IC
3. A speaker is an example of device.
a) processing b) storage c) input d) output
4. What is the binary equivalent of a decimal number 31?
a) 10101 b) 11111 c) 11010 d) 101101
5. Which logic gate is represented by the Boolean function:
 $F = A'B + AB'$?
a) NAND b) NOR c) XOR d) XNOR
6. A basic NOT gate consists of input and one output.
a) one b) two c) three d) four
7. Operator / in C language is called _____.
a) percentage operator b) quotient operator c) modulus operator d) addition operator
8. Which of the following is entry controlled loop.
a) While b) For c) Both **a** and **b** d) None
9. Which of the following function is used for copying the content of one variable to other variable?
a) strrev() b) strcat() c) strcpy() d) strlwr()
10. Which is the correct HTML tag for line break?
a) <hr> b)
 c) d) <h1>
11. Which of the following attribute is used for merging two columns?
a) Rowmerge b) Rowspan c) Colmerge d) Colspan

Group 'B'

[8×5=40]

12. Describe any five application areas of computer. [5]
13. Write down the characteristics of fifth generation computer. [5]
14. Subtract 1010 from 10100 using 1's and 2's complement methods. [2.5+2.5]
15. State and prove 'Distributive law of Boolean Algebra' [2.5+2.5]
16. Write a program in C language to check whether the given number is Armstrong or not. [5]
17. What is machine level language? Describe its advantages and disadvantages in detail. [1+4]
18. How do we use <tr >,<th > and <td> tag in <table? Give a suitable example. [5]
19. What is inline CSS? Describe external CSS with a suitable example. [5]

Group 'C'

[3×8=24]

20. Describe memory subsystem of computer in detail. [8]
21. Describe all derived gates along with their logic symbol, truth table and Venn-diagram. [8]
22. Write a program to calculate the sum of two matrices of size 3x2. [8]

Send - Up Examination – 2080

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Answer the questions in your own words with suitable illustrations wherever necessary. Do not scatter answers. Figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

[9×1=9]

- The central processing unit is located in the _____.
a) hard disk b) system unit c) memory unit d) monitor
- Which of the following is not considered hardware?
a) Operating System b) CPU c) Keyboard d) Hard Disk
- Extension of PowerPoint file is _____.
a) .html b) .txt c) .ppt d) .doc
- A predesigned document that already has coordinating fonts, a layout and a background:
a) guide b) model c) template d) ruler
- _____ is a short-cut key to paste in MS-Word?
a) CTRL+C b) CTRL+V c) CTRL+X d) CTRL+P
- _____ is declaration for string used in C programming:
a) Char A[20] b) Char A c) Char A[20][30] d) A[5]
- Which of the following is the data type used in C Language to define variables with decimal place?
a) Int b) Float c) Char d) String
- _____ is an example of a web browser.
a) Notepad b) Google Chrome c) Word pad d) Ms. Word
- _____ is text editor used to write HTML tags.
a) Mozilla Firefox b) Google Chrome c) Safari d) Notepad

Group 'B'

Give short answer to the following questions.

[5 x 5 = 25]

- What is logic gate? Describe OR and X-NOR gate with symbol, Venn-diagram and truth table. [1+4]
- What is multimedia? Explain different components of multimedia in detail.

OR

- What is cybercrime? Explain different types of cybercrime. [1+4=5]
- Define monitor and also differentiate between CRT monitor and LCD monitor. [5]
 - What is If statement? Write a Program to enter marks of 3 subjects, calculate Total Marks, Percentage and display division. (Criteria: 100%-70%- First Division, 69-60%- Second Division, 59%-50% Third Division else fail) [1+4]
 - What is cell reference in Excel? Write different types of cell reference with examples. [1+4]

Group 'C'

Give long answer to the following question.

[2x8 = 16]

- What is operating system? Explain any six functions of operating system in detail. [2+6]
- What is a string function? Write following programs in C language: [2+6]
 - Check whether input string is palindrome or not.
 - Enter three strings and display the longest among them.

Send - Up Examination – 2080

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Answer the questions in your own words with suitable illustrations wherever necessary. Do not scatter answers. Figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

[11×1=11]

Rewrite the correct option in your answer sheet.

- _____ is a hardcopy output device.
a) Hard disk b) Plotter c) Barcode reader d) Monitor
- Which of the following is not considered hardware?
a) MS-DOS b) CPU c) Keyboard d) Hard Disk
- Extension of Turbo C++ file is _____ .
a) .html b) .txt c) .ppt d) .CPP
- A predesigned document that already has coordinating fonts, a layout and a background:
a) Mail merge b) Model c) Template d) Ruler
- _____ is a short-cut key to underline in MS-Word?
a) CTRL+C b) CTRL+U c) ALT+U d) Shift+U
- _____ is an unconditional statement used in C programming.
a) Printf(b) Scanf() c) Goto d) Cometo
- Which of the following is the data type used in C Language to define variables with characters?
a) Int b) Float c) Char d) String
- _____ is an example of a web browser.
a) HTML b) Google Chrome c) Notepad d) Wordpad
- Notepad is _____ used to write HTML tags.
a) text editor b) tag editor c) explorer d) browser

Group 'B'

Give short answer to the following questions.

[8 x 5 = 40]

- What is logic gate? Describe AND and NOT gate with symbol, Venn-diagram and truth table. [1+4]
- What is multimedia? Explain different applications of multimedia in detail.

OR

- What is computer ethics? Describe computer ethics in detail. [1+4]
- Differentiate between Impact and Non-Impact printers with examples [5]
 - What is a word processor? Write down features and applications of word processing software. [1+4]
 - What is a loop? Write a program to display multiplication table of an input number till the term supplied, using loop. [1+4]

Group 'C'

[3×8=24]

Give long answer to the following questions.

- Describe software and its types in detail. [2+6]
- What is a string function? Write the functions of the following with examples: [2+6]
a)strev() b)strupr() c)strlwr() d)strcmp()
e)strcat() f)strlen()

Send - Up Examination – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

[9×1= 9]

Rewrite the correct option of each question in your answer sheet.

1. The central processing unit is located in the _____.
a. Hard disk b. System unit c. Memory unit d. Monitor
2. Which of the following is not the hardware?
a. MS-DOS b. CPU c. Keyboard d. Hard Disk
3. The extension of Power Point file is _____ .
a. .html b. .txt c. .ppt d. .doc
4. Which of the following is the Analog Computer?
a. Digital Watch b. Thermometer c. Computers d. Spyware
5. Who developed C Programming Language?
a. James Gosling b. John Thomas c. Herman Hollerith d. Dennis Ritchie
6. Which of the following is image format?
a. DOC b. PPT c. XLS d. JPEG
7. How do you insert background color in web page using html tag?
a. <body background= “ ”> b. <body bgcolor = “ ”>
c. <body backcolor= “ ”> d. <body color= “ ”>
8. Which of the following is cybercrime?
a. Hacking b. Phishing c. Data theft d. All of them
9. _____ is the example web browser.
a. HTML b. Yahoo c. Google chrome d. Google

Group 'B'

[5×5=25]

10. Explain the types of Computers on the basis of size.

OR

Subtract 1011 from 1100 using 1's and 2's complement method.

11. Describe the function of operating system.
12. What is a tag in HTML? Explain the types of tags with examples.

OR

What is multimedia? Describe different application areas of multimedia.

[1+4]

13. WAP to find the sum of first 50 even numbers.
14. Write any five commandments of computer ethics.

Group 'C'

[2×8=16]

15. Explain the computer architecture with block diagram and function of its components.

OR

WAP to input 10 numbers in an array and sort them in ascending order.

16. What are basic gates? Explain them with truth table, logic symbol and Venn diagram.

[1+7]

Send - Up Examination – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

[9×1=9]

Rewrite the correct option of each question in your answer sheet.

1. Who invented the vacuum tube?
a. Charles Babbage b. Lady Ada c. Lee De Forest d. Herman Hollerith
2. The octal number system has a base of _____.
a. 2 b. 8 c. 10 d. 16
3. It is a general term used to describe a collection of programs.
a. Program b. Data c. Software d. none
4. Which operator is used to start formula in excel cell?
a. \$ b. @ c. + d. =
5. The HTML tags that have both opening and closing tags are called:
a. Singular tags b. Paired tags c. Formatting tags d. Joining tags
6. Float is data type used in C to hold
a. Numeric decimal valued numbers b. Characters
c. Special symbols d. Non negative integers
7. Which of the following is the web-based email?
a. yahoo b. gmail c. hotmail d. all of them
8. Which image format is best used for photographs and offers a small file size?
a. PNG b. GIF c. BMP d. JPEG
9. Which of the following monitors user activity on internet and collects personal information?
a. worm b. spyware c. adware d. virus

Group 'B'

[5×5=25]

10. Explain different application areas of computer.

OR

Subtract 1100 from 1101 using 1's and 2's complement method.

11. What is operating system? Differentiate between application software and system software. [1+4]
12. What is HTML? Write HTML code to display a table with 3 rows and 4 columns. [1+4]

OR

What are the advantages of multimedia? Explain.

13. WAP in C to calculate the factorial of given number.
14. What is cyber-crime? Define any four cybercrimes you know. [1+4]

Group 'C'

[2×8=16]

15. Explain the different types of memory used in computer system.

OR

WAP to input two matrices of order 3X3 and find their sum.

16. Explain derived gates with their truth table, symbols and Venn diagram.

Send - Up Examination – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: C

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

[9×1=9]

Rewrite the correct option of each question in your answer sheet.

1. _____ was developed by Dr. Herman Hollerith.
a. Difference Engine b. Pascaline c. Tabulator d. Abacus
2. _____ is the 1's complement of 1001001.
a. 1110110 b. 0110110 c. 1010101 d. 1111101
3. Which of the following is system software?
a. operating system b. utility software c. compiler d. all of them
4. Which of the following is singular tag?
a. <hr> b.
 c. d. all of these
5. Diagrammatic representation of algorithm is called _____.
a. program b. flowchart c. algorithm d. pseudocodes
6. Which of the following is pre-test loop?
a. For b. while c. do while d. none
7. What is the extension of excel file?
a. .ppt b. .xlsx c. .doc d. .jpg
8. In which of the following fields, multimedia is used?
a. education b. entertainment c. training d. all of these
9. Which of the following is cybercrime?
a. phishing b. password c. cryptography d. digital signature

Group 'B'

[5×5=25]

10. What is language translator? Describe its types.

[1+4]

OR

Subtract 1011 from 1111 using 1's and 2's compliment method.

11. What is operating system? Differentiate between CUI and GUI based operating system.

[1+4]

12. What is hyperlink? Describe ordered and unordered list with examples.

[1+4]

OR

What is multimedia? Describe the components of multimedia.

13. WAP to input 10 numbers in an array and find their sum.

14. Describe any five preventive methods of cybercrime.

Group 'C'

[2×8=16]

15. Describe the internal architecture of computer system and describe the functions of its components.

OR

What is string handling function? Describe any five string handling functions with examples.

[1+7]

16. What is Boolean Algebra? State and prove De-Morgans theorem with truth table and circuit diagram. [1+7]

Send - Up Examination – 2081

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: D

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

[9×1=9]

Rewrite the correct option of each question in your answer sheet.

- Which bus is bidirectional bus?
a. Address bus b. Data bus c. Control bus d. All of the above
- The octal number system has a base of _____.
a. 2 b. 8 c. 10 d. 16
- Program stored in ROM is called _____.
a. firmware b. software c. freeware d. none of these
- Which of the following is not an operating system?
a. windows b. linux c. oracle d. dos
- Which of the following is comment delimiter in C?
a. {and} b. (and) c. /* and */ d. [and]
- Which formula is used to add value of A1 and A2 in excel?
a. = A1+A2 b. = sum(A1,A2) c. = sum(A1:A2) d. all of the above
- Which of the following monitor user activity on internet and transmit information in the background to someone else?
a. malware b. spyware c. adware d. virus
- Which of the following is the extension of notepad?
a. .txt b. .xls c. .ppt d. .bmp
- Multimedia is the combination of _____.
a. text, graphics art & animation b. audio and video c. both a and bd. none of the above

Group 'B'

[5×5=25]

10. What is computer? Describe the types of computer on the basis of size. [1+4]

OR

Subtract 1100 from 1111 using 1's and 2's compliment method.

11. What is operating system? Differentiate between system and application software. [1+4]

12. What is HTML? Explain the basic structure of HTML.

OR

What is multimedia? Describe different application areas of multimedia. [1+4]

13. WAP to display Fibonacci series upto n^{th} term.

14. What is computer crime? Explain the different forms of computer crime. [1+4]

Group 'C'

[2×8=16]

15. Explain the different types of memory used in computer system.

OR

WAP to input 10 numbers in an array and sort them in ascending order.

16. What are basic gates? Explain them with truth table, logic symbol and Venn diagram. [1+7]

Send - Up Examination – 2082

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: A

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

[9×1= 9]

Rewrite the correct option of each question in your answer sheet.

- Which of the following is a cyber-crime?
a) Phishing b) Data theft c) Cyber espionage d) All of above
- Which bus is responsible for transmitting data and information in a bidirectional fashion?
c) Address b) Data c) Control d) Memory
- In C programming, the symbol ___ is used to divide any two numbers and return the remainder.
b) & b) / c) % d) #
- What is the 1's complement of a binary number 1100110?
c) 0011001 b) 1100001 c) 0011010 d) 1010100
- What is the maximum zoom size in Microsoft Word application?
c) 400 % b) 500 % c) 600 % d) 300 %
- Which tag do you used to insert an image in your webpage?
b) c) c) <image source=...> d)
- LINUX/UNIX belong to:
b) Operating System c) Application Software
c) Web-based Software d) Device Driver
- Multimedia is comprised of:
b) Graphics b) Audio c) Video d) All of these
- The major processing component of third generation computer is _____.
b) SSD b) Transistor c) IC d) Microprocessor

Group 'B'

[5×5=25]

- What is computer? Describe any 4 characteristics of computer in brief. [1+4]
- What do you understand by an Open-source OS? Mention its advantages and disadvantages. [1+2+2]

OR

Distinguish between system software and application software.

- Who developed HTML? Write an HTML code to create and display an ordered list and unordered list in a single webpage. [1+4]
- What is meant by cyber ethics? Mention the commandments of cyber/computer ethics. [1+4]

OR

Explain the application areas of multimedia. [5]

- Write a C program that reads a number from the user and checks whether it is a prime or composite number. [5]

Group 'C'

[2×8=16]

- What is the declaration syntax of a 2-D array? Write a C program that asks to input the elements of any two 3×3 matrices and determines their sum. [1+7]

OR

What is an array? Write a C program which reads the salaries of 30 employees working in F1Soft Nepal Pvt. Ltd. in an array and sorts them in descending order. [1+7]

- Which logic gates are also called universal gates and why? Explain all the basic gates along with their logic symbols, truth tables and Venn-diagrams. [2+6]

Send - Up Examination – 2082

Class: XI

Time: 3 hrs.

F. M.: 75

P.M.: 30

Set: B

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all questions.

Group 'A'

[9×1=9]

Rewrite the correct option of each question in your answer sheet.

- Which of the following is the objective of ICT Policy of Nepal?
a) Make IT accessible to general public b) Build a knowledge-based society
c) Establish knowledge-based industries d) All of above
- Which bus is responsible for carrying memory address within the device?
a) Memory b) Control c) Address d) Data
- In C programming, the I/O function _____ is responsible for taking inputs from the users through keyboard.
a) printf() b) scanf() c) puts() d) putchar()
- What is the 1's complement of a binary number 111000?
a) 110011 b) 101010 c) 000101 d) 000111
- What is the extension of a PowerPoint document?
a) .pptx b) .xlsx c) .docx d) .ppt
- Who developed HTML?
a) Dennis Ritchie c) Brendan Eich c) Tim Berners Lee d) Charles Babbage
- People associated with Computer Science/IT are called:
a) Operating System b) License ware c) Freeware d) Liveware
- Which is the example of an image file format?
a) .TXT b) .MP4 c) .JPEG d) MP3
- _____ is the operating speed of fourth generation computer.
a) femtosecond b) picosecond c) nanosecond d) microsecond

Group 'B'

[5×5=25]

- What is computer memory? Compare and contrast between the SRAM and DRAM used in a computer system. [1+4]
- Distinguish between the CUI and GUI based Operating System. [5]

OR

What is a software? Describe the types of application software. [1+4]

- Enlist and explain various text/paragraph formatting tags used in HTML document along with a suitable example. [1+4]
- What is meant by Intellectual property right? Describe its types in brief. [1+4]

OR

Explain the key components of Multimedia. [5]

- Write a C program which asks the user to enter a number and determines whether it is a Palindrome number or not. [5]

Group 'C'

[2×8=16]

- Which loop is also known as exit-controlled loop and why? Write a C program to input the marks obtained by 40 students of your class in Computer Science subject and sort them in ascending order. [2+6]

OR

What is String function in C programming? Explain various string handling functions along with their suitable example. [1+7]

- What is Boolean algebra? Who developed it? Explain any three derived logic gates along with their logic symbols, truth tables and Venn-diagrams. [1+1+6]

NEB-Model Questions – 2078

Time: 2 hrs.

F.M.: 50

P.M.: 18

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

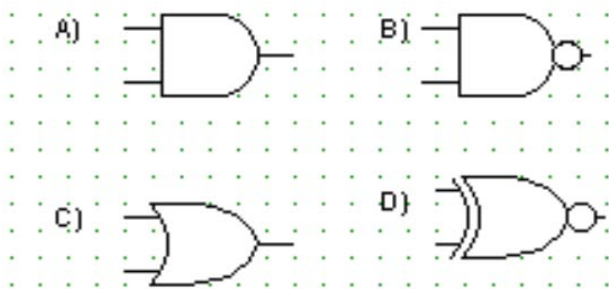
Group 'A'

Multiple Choice Questions

(9x1=9)

Rewrite the correct option in your answer sheet.

- Which one of the following is an input device?
a) speaker b) printer c) monitor d) mouse
- Which of the following is NOT a bus type?
a) Address bus b) Data bus c) Memory bus d) Control bus
- How to represent Boolean $F(x,y) = x.y$ in logic gate?



- Which scheduling algorithm allocates the CPU first to the process that requests the CPU first?
a) first-come, first-served scheduling b) shortest job scheduling
c) Priority scheduling d) Round robin scheduling
- Which operator is used to start for enter the formula in in Excel cell?
a) \$ b) @ c) = d) +
- Which looping process checks the test condition at the end of the loop?
a) for b) while d) do-while d) Nested loop
- How to insert an image in web page using HTML tag?
a. b. c. img src = ...> d.
- Which image format is best used for photographs and offers a small file size? (U)
a) PNG b) GIF c) BMP d) JPEG
- Which of following is monitors user activity on internet and transmit that information in the background to someone else? (U)
a) Malware b) Spyware c) Adware d) Virus230

Group 'B'

Give short answer to the following questions.

(5 × 5=25)

- Explain different types of secondary memory of computer system.

Or

Describe the decimal to binary number conversion process with example.

- What are the functions of operating system? Describe.
- Define different types of CSS.

Or

Explain the different components of multimedia.

- Differentiate between the do and while loop.

Group 'C'

(2x8=16)

Give long answer to the following questions.

15. Explain different types of memory in detail. [8]

OR

a. Explain functions of operating system. [4]

b. Differentiate between GUI and CUI operating system with examples. [4]

16. What is loop statement? Write following programs in C language: [2+3+3]

a. To print multiplication table of 7 using for loop.

b. To print Fibonacci series: 1,1,2,3,5.....upto 10th terms.

OR

Write syntax of if else statement.WAP to find total marks, percentage and grades of student using if else statement.[Hint: 5 subjects each has FM=100, percentage≥80=A, percentage≥ 60 = B,percentage ≥ 40=C,percentage ≥20=D otherwise , insufficient]. [2+6]

NEB Examination – 2078

Time: 3 hrs

F.M.: 50

P.M.: 20

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

(9×1=9)

Rewrite the correct option in your answer sheet.

- Which one of the following is magnetic disk?
a. Plotter b. Tape unit c. Memo stick d. HDD
- What was the main component used in Third Generation computers?
a. Transistors b. Vacuum Tubes c. IC chips d. Bio chips
- Which Operating System supports parallel processing?
a. Multiprogramming b. Multitasking c. Multiprocessing d. Batch processing
- Which of the following is a Tailored software?
a. MS-WORD b. Oracle c. C program d. School Billing System
- Which looping process checks the test condition at the beginning of the loop?
a. for b. while c. do-while d. nested loop
- How do you insert an image in web page using html tag?
a. <img=...> b. c. d.
- Which of the following is a Cyber Crime?
a. Phishing b. Identity theft c. Plagiarism d. All of them
- Memory space occupied by float data type in C is?
a. 5 bytes b. 4 bytes c. 6 bytes d. 2 bytes
- Which of the following is Language Processors?
a. Malware b. Spyware c. Compiler d. Adware

Group 'B'

(5×5=25)

Give short answers to the following questions.

1. Explain different types of secondary memory of computer system.

Or

Subtract the following using 2's Complement method

a. 101011-1111 b. 101-11101

2. What are the functions of Operating System? Describe.

3. What is HTML? Write tags to create a table of 3 rows by 4 columns.

What is array? Describe types of array with suitable examples. [1+4]

Group 'C' (2x8=16)

Give long answer to the following questions.

15. Explain different types of memory in detail. [8]

OR

a. Explain functions of operating system. [4]

b. Differentiate between GUI and CUI operating system with examples. [4]

16. What is loop statement? Write following programs in C language: [2+3+3]

a. To print multiplication table of 7 using for loop.

b. To print Fibonacci series: 1,1,2,3,5.....upto 10th terms.

OR

Write syntax of if else statement.WAP to find total marks, percentage and grades of student using if else statement.[Hint: 5 subjects each has FM=100, percentage≥80=A, percentage≥ 60 = B,percentage ≥ 40=C,percentage ≥20=D otherwise , insufficient]. [2+6]

NEB Examination – 2081

Time: 3 hrs

F.M.: 50

P.M.: 20

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A' [9×1 = 9]

Rewrite the correct option of each question in your answer sheet.

- Octal number system has a base of _____.
a. 16 b. 8 c. 10 d. 2
- Which of the following is NOT the hardware?
a. MS-Excel b. CPU c. Keyboard d. Hard Disk
- The extension of a Power Point file is _____.
a. html b. .txt c. .pptx d. .docx
- What was the major component of 2nd generation computer?
a. Vacuum Tubes b. Transistor c. Integrated Circuit d. Microprocessor
- Who developed C Programming Language?
a. James Gosling b. John Thomas c. Herman Hollerith d. Dennis Ritchie
- The 1's complement of a binary number '1001001' is _____.
a. 0001010 b. 0001111. c. 0110110 d. 0001011
- Which tag do you use to create an Ordered List in HTML?
a. b. c. <OList> </OList> d. <OLI> </OLI>
- Which of the following is cybercrime?
a. Hacking b. Phishing c. Cyber bullying d. All of them
- _____ is the example of a web browser.
a. HTML b. Yahoo c. Google Chrome d. Google

Group 'B' [5×5=25]

Give short answers to the following questions.

10. What is computer memory? Distinguish between RAM and ROM. [1+4]

OR

Subtract 1011 from 1100 using 1's and 2's complement method.

11. What is computer software? Distinguish between the system software and application software. [1+4]
12. Who developed HTML? Write HTML code to create and display the following table in a webpage. [1+4]

UID	Full Name	Email Address
1	Carlos Patterson	pcarlos2000@gmail.com
2	Luna Watkins	lunawk2005@gmail.com
3	Aaron Gomez	gomez_ar07@gmail.com

OR

What is multimedia? How multimedia can be used in the fields of education and entertainment?

13. Write a C program to enter a number and check whether it is prime or composite number.
14. What do you understand by cyber-crime? Enlist some important preventive measures of cyber-crime. [1+4]

Group 'C'

[2x8=16]

Give long answer to the following questions.

15. What do you understand by array in C programming? Write a C program to enter marks obtained in computer science by 50 students in an array and sort them in ascending order. [1+7]

OR

Write a C program to input any two matrices of 2x3 size and find their sum.

16. Describe AND, OR, NAND and NOR gates of Boolean Algebra along with their logic symbol, truth table and Venn-diagram. [2+2+2+2]

NEB Examination – 2082

Time: 3 hrs

F.M.: 50

P.M.: 20

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

[9×1 = 9]

Rewrite the correct option of each question in your answer sheet.

- Which of the following is the objective of ICT Policy of Nepal?
a) Make IT accessible to general public b) Build a knowledge-based society
c) Establish knowledge-based industries d) All of above
- Which is the extension of an image file?
a) .pptx b) .mp3 c) .jpeg d) .txt
- What will be the output of the following C- program snippet?

```
int main() {  
int a=20, b=5;  
int result = a%b;  
printf("%d", result);  
}
```


a) 0 b) 4 c) 15 d) error!
- What is the 1's complement of a binary number 110110?
a) 110011 b) 001001 c) 101010 d) 000111
- What is the maximum zoom size in each document of MS-Word?
a) 200% b) 300% c) 400% d) 500%
- Which is the correct way to insert an image using HTML?
a) c) <photo source = "...">
b) d)

7. Which is an example of an Operating System?
a) LINUX b) Windows c) Mac OSX d) All of these
8. The Boolean function $F \rightarrow (A+B)'$ represents _____ gate.
a) NAND b) NOR c) XOR d) AND
9. _____ is the operating speed of third generation computer.
a) Femtosecond b) Picosecond c) Nanosecond d) Microsecond

Group 'B'

[5×5=25]

Give short answers to the following questions.

10. What do you understand by computer memory? Distinguish between RAM and ROM. [1+4]

OR

 Subtract 110001 from 111000 using 1's and 2's complement methods. [5]
11. Enlist and explain the functions of an Operating System. [5]
12. Who developed HTML? Write HTML code to design a table having 4 rows and 4 columns. [1+4]
13. What is meant by cybercrime? How can you protect yourself from being a victim of such crimes? [1+4]

OR

 Explain the key components of Multimedia. [5]
14. Write a C program which asks the user to enter a number and calculates its factorial. [5]

Group 'C'

[2x8=16]

Give long answer to the following questions.

15. What is looping in C programming? Write a C program to enter the salary of 30 employees in an array and sort them in ascending order. [1+7]

OR

 What is a 2D (*two dimensional*) array? Write a C program to input the elements of any two 2×3 matrices and find their sum. [1+7]
16. Which logic gates are called Universal gates and why? Explain all the basic logic gates along with their logic symbol, truth table and Venn-diagrams. [2+6]