

Multiple Choice Questions:

1. is the branch of technology that deals with the design, construction, operation and application of robots.
a) Hardware c) Software b) Robotics d) None of the above
2. Is the part of computer science concerned with designing intelligent computer systems.
a) Hardware c) Software
b) Artificial Intelligence d) None of the above
3. is the use of various services such as software development platforms, servers, storage and software over the internet.
a) Hard disk c) Cloud Computing b) Pen drive d) None of the above
4. SaaS stands for
a) Software as a Service c) Both a and b
b) System as a Service d) None of them
5. IaaS stands for
a) Internet as a Service b) Infrastructure as a Service
b) Both a and b d) None of the above
6. PaaS stands
a) Platform as a Service b) Program as a Service
c) Both a and b d) None of the above
7. Is a term that expresses computer based simulated environments which can perceive as in the real world as well as unreal worlds.
a) Virtual Reality c) System b) MS-Excel d) None of the above
8. IoT stands for
a) Internal of Things c) Internet of things
b) Internet of Technology d) None of the above
9. IP stands for
a) Internet Program c) Internet Program
b) Internet Protocol d) None of the above

Corrected answer

Question	1	2	3	4	5	6	7	8	9
Answer	b	b	c	a	b	a	a	c	b

NEB – Sample Exam – Set A

Computer Science - Grade XII (2079)

Time: 2 hrs.

Full Marks: 50

Group "A"

Multiple Choice Questions (1×9=9)

Rewrite the correct options of each questions in your answer sheet.

1. In which normal form of database, atomicity is introduced?
A) First B) Second C) Third D) Fourth
2. Which of the following techniques is not implemented to protect a database?
A) Rollback B) Backup C) Recovery D) Firewall
3. Which one of the following SQL commands is executed to display all the records having a second letter in the LNAME (LASTNAME) as "A" from the customer table?
A) SELECT * FROM CUSTOMER WHERE LNAME LIKE "?A%";
B) SELECT * FROM CUSTOMER WHERE LNAME LIKE "_A%";
C) SELECT * FROM CUSTOMER WHERE LNAME LIKE "A%";
D) SELECT * FROM CUSTOMER WHERE LNAME LIKE "%A";
4. Which of the following is an incorrect IP address?
A) 192.168.0.1 B) 192.168.1 C) 172.255.0.0 D) 202.10.79.4
5. Which of the following is a server-side scripting language?
A) JavaScript B) MySQL C) PHP D) JQuery
6. Which of the following keywords are used to declare a variable in JavaScript?
A) int or var B) float or let C) var or let D) char or var
7. Which of the following commands is executed in PHP to concatenate the variables \$x with \$y?
A) \$x + \$y B) \$x=\$y C) concat (\$x,\$y) D) \$x.\$y
8. Which statement is incorrect about the object-oriented approach?
A) Emphasis is on data rather than procedure.
B) Data is hidden and cannot be accessed.
C) Objects communicate through functions.
D) It supports abstract data but not the class.

9. Which of the following feasibility study is concerned with cost benefit analysis?
- A) Technical feasibility B) Economic feasibility
C) Operational feasibility D) Schedule feasibility

Group 'B'

Short Answer Questions (5 × 5 = 25)

10. Which type of database system (centralized or distributed) is mostly preferred by financial institution like a bank? Give any four suitable reasons. [1+4]

OR

Nowadays most of the business organizations prefer applying relational model for database design in comparison to other models. Justify the statement with your arguments. [5]

11. Develop a program in JavaScript to exchange/swap the values of any two variables. [5]

OR

How can you connect a database with PHP? Demonstrate with an example. 5

12. Describe the concept of Object Oriented and Procedure Oriented Programming in brief. [2+3]
13. Write down any five qualities of good software. [5]
14. Explain mobile computing with its advantages and disadvantages. [5]

Group 'C'

Long Answer Questions (2 × 8 = 16)

15. Why do most of the business organizations prefer setting their network with the client-server architecture? Write its advantages and disadvantages. [2+6]
16. Develop a program in C using structure to ask the information of any 12 students with roll number, name and marks scored in sub1, sub2, and sub3. Also, display them in proper format along with the calculation of total and percentage. [Note: the full marks of each subject is 100].

OR

Demonstrate a program in C to create a data file named score.dat to store students' information with Reg_no, name, gender, and address. The program should ask the user to continue or not. When finished, the program should also display all the records in the proper format.

NEB – Sample Exam – Set B

Computer Science - Grade XII

Time: 2 hrs.

Full Marks: 50

Group "A"

Multiple Choice Questions (1×9=9)

1. Which of the following is an example of DML?
a. CREATE b. UPDATE c. DROP d. ALTER
2. Which query is used to select records from a table named "students" where value of column name roll_no = 02?
a. SELECT * FROM students.
b. SELECT * FROM STUDENTS WHERE roll_no = 02
c. SELECT * FROM STUDENTS HAVING roll_no = 02
d. SELECT * FROM roll_no = 02
3. Which of the following is a programming language to make our webpages dynamic?
a. JavaScript b. HTML c. CSS d. ActionScript
4. In OOP the focus is given to which of the following entities?
a. Data b. Functions c. Structure d. All of the above
5. What is the tag used to insert links in HTML?
a. <a> b. <p> c. <h1> d.
6. Which of the following is not a proper file operation mode?
a. close b. read c. write d. append
7. Which of the following is the first step in SDLC framework?
a. Feasibility Study b. Requirement Gathering
c. Communication d. System Analysis
8. MAN Stands for _____.
a. Metropolitan Area Network b. Main Area Network
c. Metropolitan Access Network d. Metro Access Network
9. IOT stands for
a. Internet of This b. Internet of That
c. Internet of Things d. Internet or Thing

Group 'B'

Short Answer Questions (5 × 5 = 25)

1. What is normalization. Explain its 1NF and 2NF with example.

OR

What do you mean by DDL explain with an example

2. Write a program to check if a number is even or odd in JavaScript.

OR

Explain what you understand by client-side scripting language and server-side scripting language.

3. Describe the different features of OOP
4. What do you understand by waterfall model? Explain different stages of Waterfall model.
5. What do you mean by E-commerce, E-governance, E-medicine, E-banking.

Group 'C'

Long Answer Questions (2 × 8 = 16)

6. What are the different network topologies. Explain each with 2 merits and 2 demerits?
7. Write a program that reads name, roll_no, marks and address of 20 students using structure and display them.

OR

What do you understand by pointers? Write a program to read and write from and to a file using any file handling functions.

NEB – Sample Exam – Set C

Computer Science - Grade XII

Time: 2 hrs.

Full Marks: 50

Group "A"

Multiple Choice Questions (1×9=9)

1. Which language is used by most of DBMSs for helping their users to access data?
(A) HLL (B) Query language (C) SQL (D) 4 GL
2. Which of the following items is not used in Local Area Networks(LANs)?
A. Computer Modem B. Cable C. Modem D. Interface card
3. What is divide by 0 in Javascript?
var a = 10; var b = 0;
document.write(a/b);
(A) Nothing is printed (B) 0 is printed
(C) Infinity is printed (D) Some Garbage Value
4. PHP scripts are enclosed within _____.
A. <php> . . . </php> B. <?php . . . ?>
C. ?php . . . ?php D. <p> . . . </p>
5. File is a type of?
A. struct B. int C. char * D. None of the above
6. If a function can perform more than 1 type of tasks, where the function name remains same, which feature of OOP is used here?
a) Encapsulation b) Inheritance c) Polymorphism d) Abstraction
7. The waterfall model suggests a systematic _____.
a. Iterative approach b. Spiral approach
c. Sequential approach d. None of the mentioned above
8. Robotics is a branch of AI, which is composed of _____.
A. Electrical Engineering B. Mechanical Engineering
C. Computer Science D. All of the above
9. In how many forms BigData could be found?
A. 2 B. 3 C. 4 D. 5

Group 'B'

Short Answer Questions (5 × 5 = 25)

1. Define Cloud Computing. Explain about Cloud Computing in detail. (1+4)
2. Define Software development model. Explain about any two types of Software development model in short. (1+4)
3. Define OOPs. Explain any three properties of OOPs in detail. (1+4)
4. Define pointer. Explain the syntax and advantages of pointer in c. (1+4)

OR

Define structure. WAP to input name, roll_no and address of 5 students and display the inputs and appropriate form using structure. (1+4)

5. Define Normalization. Explain the types of Normalization briefly. (1+4)

OR

Define Data security. Explain about DDL and DML in short. (1+4)

Group 'C'

Long Answer Questions (2 × 8 = 16)

6. Define Internet Protocol addressing. Explain about Transmission media in detail. (1+7)
7. WAP to input name and address of 5 employees and sort them in descending alphabetic order according to their name.

OR

Explain fscanf() and fwrite function with examples. Also write a program in C to read the marks of 5 subjects of any five students from a file "marks.dat" and calculate total marks and average marks. Also print all the information in appropriate format.

Model Question, 2078 (2021)

School Leaving Certificate Examination

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group "A"

Multiple Choice question (9 × 1 = 9)

Tick the correct answer.

1. Which of the statements are used in DDL?
 - a. Create, alter and drop
 - b. Create, insert and select
 - c. Insert, update and delete
 - d. Delete, alter and drop
2. With SQL, how do you select all the records from a table named "Persons" where the value of the column "FirstName" ends with an "a"?
 - a. SELECT * FROM Persons WHERE FirstName='a'
 - b. SELECT * FROM Persons WHERE FirstName LIKE 'a%'
 - c. SELECT * FROM Persons WHERE FirstName LIKE '%a'
 - d. SELECT * FROM Persons WHERE FirstName='%a%'
3. Which of the following statements is true about a star network topology?
 - a. Each device is connected to a switch or hub
 - b. Each device is connected to each other
 - c. Each device is connected in a trunk
 - d. Each device is connected to a terminal
4. Which of the following is the correct syntax to display "Stay Safe" in an alert box using JavaScript?
 - a. alert-box("Stay Safe");
 - b. confirm("Stay Safe");
 - c. msgbox("Stay safe");
 - d. alert("Stay Safe");
5. What is the use of <A> tag?
 - a. To insert an image
 - b. To create a link
 - c. To create a hyperlink
 - d. To create a list

6. What is the output of given C program?

```
void main(){
    char str1[] = "FIRST"; char str2[20]; strcpy(str2,str1);
    printf("%s %s :",str1,str2); printf("%d", (str1!=str2));
    printf("%d", strcmp(str1,str2)); }
```

- a. FIRST FIRST 0 0
- b. FIRST FIRST 1 1
- c. FIRST FIRST 1 0
- d. FIRST FIRST 0 1

7. Where is a class derived in inheritance?

- a. Superclass b. Subclass c. Subsetclass d. Relativeclass

8. Which of these is the correct order of the SDLC?

- a. Analysis, Design, Coding, Testing, Implementation
- b. Analysis, Design, Testing, Implementation, Coding
- c. Implementation, Coding, Analysis, Design, Testing
- d. Design, Testing, Implementation, Coding, Analysis

9. Why is cloud computing popular nowadays?

- a. Cost-sharing and easily accessible
- b. As modern technology and costly
- c. Accessible and freely available
- d. Affordable to all

School Leaving Certificate Examination, 2078

Grade: XII

Subject: Computer Science (Th)

Subject code: 232

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group 'B'

Short Answer Questions (5 × 5 = 25)

1. Explain 2NF and 3 NF with example.

OR

Demonstrate the basic DML statement with an example.

2. Write a function to add any two numbers in Javascript.

OR

Demonstrate the external CSS implemented in the web page.

3. Describe any five features of OOPs.

4. What are the different stages of software planning? Describe.

5. Define the concept of AI and IoT. (2+3)

Group 'C'

Long Answer Questions (2 × 8 = 16)

6. How do you implement the Class C IP address in the local area network? Describe.

7. Write a program to enter ten integer numbers into an array, sort and display them in ascending order.

OR

Write a program to read the marks of any 5 students in a subject and count how many students are pass and fail.

Model Set 1

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group "A"

Multiple Choice question (9 × 1 = 9)

Tick the correct answer.

- Which of the following gives a logical structure to the database graphically?
a) Database diagram. b) Relational diagram.
c) Entity relationship diagram. d) Architecture diagram.
- Which of the given sign is used as a shortcut for jQuery?
a) the @ sign. b) the & sign. c) the . sign. d) the \$ sign.
- Which of the following is a standard way to show a pop-up alert box in JavaScript?
a) window.alert("some text"); b) print.alert("some text");
c) window(some text); d) show.alert(some text);
- If the system uses separate protocols, which one of the following devices is used to link two systems?
a) Gateway. b) Bridge. c) Hub. d) Repeater.
- Find the correct statement for pointer in c program. E.g.; int a, *p; here...
a) a and p, both are pointers. b) a and p, both are not pointers to integer.
c) p is pointer, &a is may or may not. d) p is a pointer to integer, a is not.
- Child class is derived from a base class in
a) Inheritance. b) Polymorphism.
c) Encapsulation. d) Abstraction
- What is the divided by zero in the following JavaScript?
var a=60, b=0; document.write(a/b);
a) Nothing. b) 0 is printed.
c) Infinity is printed. d) Garbage value.
- In the system development life cycle, which statement gives long life to the new system?
a) system testing. b) system implementation.
c) system study. d) system maintenance.
- Which of the following represents the fastest data transmission speed?
a) Gbps. b) Kbps.
c) Bps. d) Mbps

Group 'B'

Short Answer Questions (5 × 5 = 25)

10. Define the RDBMS. Define guiding principles used in database design.

OR

What is the Relational database model? List the advantages and disadvantages of the Relational database model.

11. Write JavaScript to reverse a given string.

OR

Write a PHP code to connect with the database.

12. Define the Software development model. Explain any two types of the Software development model in short.
13. What is inheritance? Explain different types of inheritance in brief.
14. Define Big data with its advantages.

Group 'C'

Long Answer Questions (2 × 8 = 16)

15. Explain different types of LAN topology. Explain the differences between BUS and STAR topology with a diagram. [2+6]
16. Write a c program that reads roll_no, name, address, and marks of 20 students using an array structure. Display roll_no, name, address, and marks of those students whose mark range from 60 to 100. [8]

OR

Write a program to read and write from and to a file using any file handling functions. [8]

Model Set 2

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group "A"

Multiple Choice question (9 × 1 = 9)

Tick the correct answer.

- Prevention of access to the database by authorizing.
a) Integrity. b) Security
c) Productivity. d) Reliability
- Each computer on the Internet has a unique numeric address called a/an...
a) Web address. b) Domain address.
c) Network binding. d) IP address.

3. What happens in the following JavaScript code snippet?

```
var count=0;
while(count<10)
{ console.log(count); count++; }
```

- a) The value of the count from 0 to 9 is displayed in the console.
- b) An exception is thrown.
- c) An error is displayed.
- d) The value of the count is stored in a particular location.

4. Which function is used as a formatted output file function... ..?

- a) printf(). b) fprintf() c) puts() d) fputs()

5. Which statement needs to be corrected about the object-oriented programming approach?

- a) Emphasis is on data rather than procedure.
- b) Data is hidden and cannot be accessed.
- c) Objects communicate through functions.
- d) It supports abstract data but not the class.

6. Which of the following is not a valued step in the SDLC framework?

- a) Requirement gathering. b) System analysis.
- c) Quality Control. d) Software Design.

7. Which of the following is a server-side scripting language?

- a) JavaScript. b) MySQL.
- c) PHP d) jQuery

8. Which feasibility study is concerned with cost-benefit analysis?

- a) Technical. b) Economic.
- c) Operational. d) Schedule feasibility.

9. The network of Physical objects or people called “things” is called.

- a) Computer Network. b) IoT.
- c) WWW. d) All of the above.

Group 'B'

Short Answer Questions (5 × 5 = 25)

10. What is normalization? Explain 1NF & 2NF in brief.

OR

What is SQL? Describe the DML with an example.

11. What is JavaScript? Write a program to find the factorial of any given number using JavaScript.

OR

Write down the basic PHP syntax and an example of a PHP program.

12. Define SDLC. Describe the feasibility analysis methods.

13. What is a programming paradigm? Differentiate OOP and POP (procedural-oriented programming).

14. What is cloud computing? Explain the concept of cloud computing with its merits and demerits.

Group 'C'

Long Answer Questions (2 × 8 = 16)

15. What is the transmission medium? Which is the most suitable data transmission media to configure a LAN in your college? Justify your answer with appropriate reasons. [2+6]

16. Write a c program to read the account number, name, and balance of the 'n' number of customers from users, and display the account number, name, and balance range between 25 thousand to 40 thousand using an array structure. [8]

OR

Write a program to create a file named 'emp.txt' and read & write the name, post, and salary of 10 employees to a data file. [8]

Model Set 3

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group 'A'

Multiple Choice question (9 × 1 = 9)

Tick the correct answer.

1. Which of the following is an example of DML?

- A. CREATE B. UPDATE C. DROP D. ALTER

2. The correct query to update the record from table name STUDENT with fields id, roll, name:

- A. UPDATE student PUT roll=150 where id=1;
- B. UPDATE student SET roll=150;
- C. UPDATE student SET roll=150 WHERE id=1;
- D. UPDATE student roll=150 WHERE id=1;

3. Which of the following is a programming language to make our webpages dynamic?

- A. JavaScript B. HTML
- C. CSS D. ActionScript

4. In OOP the focus is given to which of the following entities?

- A. Data B. Functions
- C. Structure D. All of the above

5. What is the tag used to insert links in HTML?
A. <a> B. <p> C. <h1> D.
6. Which of the following is not a proper file operation mode?
A. close B. read C. write D. append
7. Which of the following is the first step in SDLC framework?
A. Feasibility Study B. Requirement Gathering
C. Communication D. System Analysis
8. MAN Stands for
A. Metropolitan Area Network B. Main Area Network
C. Metropolitan Access Network D. Metro Access Network
9. IOT stands for
A. Internet of This B. Internet of That
C. Internet of Things D. Internet or Thing

Group 'B'

Short Answer Questions (5 × 5 = 25)

10. What is normalization? Explain its 1NF and 2NF with an example.
OR
What do you mean by DDL and DML explain with an example?
11. Write a program to check if a number is even or odd in JavaScript using user defined function.
OR
Explain what you understand by client-side scripting language and server-side scripting language.
12. Describe the different features of OOP.
13. What do you understand by waterfall model? Explain different stages of Waterfall model?
14. What do you mean by E-commerce, E-governance, E-medicine and E-banking?

Group 'C'

Long Answer Questions (2 × 8 = 16)

15. WAP to enter roll_no, name, age of 20 students and count students with age > 17 and age < 25.
OR
What do you understand by pointers? Write a program to write and read student id, student name from a file "student.dat" using any file handling functions.
16. What is computer network? Write its advantage. What are the different modes of communication? What are the types of networks on the basis of architecture?

Model Set 4

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group "A"

Multiple Choice question (9 × 1 = 9)

Tick the correct answer.

1. Which of the following is not a function of the database?
A. Managing stored data B. manipulating data
C. Security for stored data D. analyzing code
2. Network that covers geographic areas that are larger, such as districts or cities is
A. LAN B. MAN C. WAN D. None of these
3. What will be the output of the following code snippet?
<script type="text/JavaScript">
a = 5 + "9"
document.write(a);
</script>
A. Compilation Error B. 14
C. Runtime Error D. 59
4. Which of the following is the first step in SDLC framework?
A. Feasibility Study B. Requirement Gathering
C. Communication D. System Analysis
5. In OOP by wrapping up characteristics and behavior into one unit, we achieve
A. Data Abstraction B. Data Encapsulation
C. Data hiding D. All of these
6. Which of the following is used to insert JavaScript code into HTML page?
A. <script>..</script> B. <script>...</script>
C. <script>.....</script> D. </script>
7. What is the output of the given C program?
void main() {
char str1[] = "ABC COLLEGE"; char str2[20];
strcpy(str2, str1); printf("%s %s %d", str1, str2, strlen(str1)); }
A. ABC COLLEGE ABC COLLEGE 11 B. ABC COLLEGE ABC COLLEGE
C. ABC COLLEGE 11 D. None of the above
8. What is Artificial Intelligence?

- A. Artificial Intelligence is a field aims to make humans more intelligent
 - B. Artificial Intelligence is a field that aims to improve the security
 - C. Artificial Intelligence is a field that aims to develop intelligent machines
 - D. Artificial Intelligence is a field that aims to mine the data
9. Offers the ability to data and modify, update, and drop tuples.
- A. Transaction Control Language (TCL)
 - B. Data Control Language (DCL)
 - C. Data Definition Language(DDL)
 - D. Data Manipulation Language (DML)

Group 'B'

Short Answer Questions (5 × 5 = 25)

10. Differentiate between centralize and distributed with example.

OR

Who is DBA? Explain his/her roles and responsibilities.

11. Define pointer. Explain the syntax and advantages of pointer in c. (1+4)

12. Define form validation. Write example of basic form validation.

OR

Write program to illustrate any two methods of adding JavaScript in HTML document.

13. Differentiate between procedural and object-oriented programming.

14. Define IOT and Big data with its advantage.

Group 'C'

Long Answer Questions (2 × 8 = 16)

15. Why is normalization needed? Explain the advantages of normalization. [3+5]

OR

Define Server side scripting. Create the PHP program to display the databases using SQL commands by establishing the connection. (1+7)

16. Write a C program to store information of 10 employees (empid, name, salary) using structure variable and display employee id and name, whose salary greater than Rs. 40,000.

Model Set 5

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group "A"

Multiple Choice question (9 × 1 = 9)

1. Which of the following is not an example of DDL?
a. ALTER b. UPDATE c. TRUNCATE d. None
2. DROP commands removes....
a. table rows only b. table columns only
c. both table rows , columns and all the constraints.
d. only deletes primary and foreign key.
3. A variable in JavaScript that has not been assigned a value has
a. symbol data type b. null data type
c. undefined data type d. none of the above
4. A php script starts withand ends with.....tag
a) <?php > b) ?php > c) <php > d) <?php ?>
5. To establish the database connection with MYSQL server,.....function is used.
a) mysqli_connect b) mysqli_connection()
c) mysql_connect() d) None of the above
6. What is the output of the following program?
#include<stdio.h>
void main()
{
int a=7;
int *p=&a;
printf("%d",*p);
}
a. address of a b. address of p c. address of *p d. 7
7. System tools like flowchart, data flow diagram etc. belongs to
a) System analysis b) system design c) program coding d) testing
8. In class a ipv4 address, the firstbits represent the network id.
a) 32 b) 24 c) 16 d) 8
9. Which of the following describes e-commerce?
a. doing business offline b. doing business electronically
c. surfing online d. Both a and b

Group 'B'

Short Answer Questions (5 × 5 = 25)

1. What is normalization? Explain 1NF, 2NF and 3NF with examples.

OR

Explain the different types of DML commands with syntax and examples.

2. Write a simple program to illustrate JavaScript events. Write a program to check if a number is palindrome or not in JavaScript using function.(2.5+2.5)

OR

Write a simple program to illustrate form validation using JavaScript. Write down a php program to find the multiplication table of a number.(2.5+2.5)

(Show output also)

3. Explain the different types of Inheritance in brief.
4. What is SDLC? Explain all the phases of SDLC with a diagram.
5. Explain big data and cloud computing in brief.

Group 'C'

Long Answer Questions (2 × 8 = 16)

1. Explain OSI model in brief with diagram. Explain all the types of transmission mode with diagram. (4+4)
2. Write a program that takes name, roll no, marks, gender and address of 10 students using structure. Sort data according to marks in descending order and display them. (Show output also)

Or

Write a program to find the factorial of a number using recursion. Write a program to write and read roll no, name and percentage of 5 students to/from student.txt file using fprintf() and fscanf().(4+4)

Model Set 6

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group "A"

Multiple Choice question (9 × 1 = 9)

1. A primary key can have.....values
a) Duplicate and null
b) null and unique
c) unique and not null
d) none of the above
2. The relational database model supports.....relationships.
a) one to one
b) one to many
c) many to one
d) many to many

3. A network topology where all the nodes are commonly connected to a hub/switch is called.....topology.

a) bus b) star c) ring d) mesh

4. PHP is...

a) database script b) client side script c) server side script d) none

5. IN php, concatenated of \$x and \$y can be written as

a) \$x+\$y b) \$x=\$y c) concat(\$x,\$y) d) \$x.\$y

6. Which of the following is an example of form event?

a) onkeydown b) onmousedown c) onsubmit d) on load

7. ...e-commerce consists of the sale of the products or services from a business to a general public.

a) B2G b) B2E c) B2B d) B2C

8. Only one member can be accessed at a time in

a)structure b) union c) pointer d) both a and b

9. Context diagram is also known asdiagram

a) level 0 dfd b) level 1 dfd
c) level 2 dfd d) all of the above

Group 'B'

Short Answer Questions (5 × 5 = 25)

1. What is normalization? Explain 1NF, 2NF and 3NF with examples.

OR

Explain the different types of DML commands with syntax and examples.

2. Write a simple program to illustrate JavaScript events. Write a program to check if a number is palindrome or not in JavaScript using function.(2.5+2.5)

OR

Write a simple program to illustrate form validation using JavaScript. Write down a php program to find the multiplication table of a number.(2.5+2.5)

(Show output also)

3. Explain the different types of Inheritance in brief.
4. Explain the different types of system testing, implementation and maintenance in brief.
5. Explain big data and cloud computing in brief.

Group 'C'

Long Answer Questions (2 × 8 = 16)

1. Explain OSI model in brief with diagram. Explain all the types of transmission mode with diagram. (4+4)

2. Write a program that takes name, roll no, marks, gender and address of 10 students using structure. Sort data according to marks in descending order and display them. (Show output also)

Or

Write a program to find the factorial of a number using recursion. Write a program to write and read roll no, name and percentage of 5 students to/from student.txt file using fprintf() and fscanf().(4+4)

Model Set 7

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group "A"

Multiple Choice question (9 × 1 = 9)

Choose the best alternative:

- NIC card is used for LAN connection.
a. True b. False
- Spiral is a.....
a. Software b. Testing phase
c. System Development model d. None of the above
- Who carries out the coding part?
a. Programmer b. System Analyst c. Client d. None
- Physical layout of computer in network is called...
a. Network b. internet
c. Topology d. None of the above
- is a component of multimedia.
a. Speaker c. Monitor
b. Sound card d. All of them
- data type contains numbers having decimal point.
a. Char b. Int c. Float d. None
- To use the strcpy() function, which header file should be included?
a. conio b. stdio c. string d. math
- The last value of the series in looping is called
a. Test Expression b. initialization
c. Increment/decrement d. All of them
- Which operator is logical OR operator?
a. || b. ! c. && d. None

Model Set 8

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group "A"

Multiple Choice question (9 × 1 = 9)

Choose the best alternative:

- The is the physical path over which a message travels.
a. protocol b. medium
c. signal d. None
- The key that uniquely identifies a record is called
a. Field name b. Unique key
c. Primary key d. Key record
- Systems are modified whenever
a. User's requirement change.
b. New computers are introduced in the market
c. New software tools become available in the market
d. Other similar organization modify these system
- is used to input records in MS-Access.
a. Report b. Table
c. Form d. None
- Network that covers the longest distance is called
a. LAN b. MAN
c. WAN d. HAN
- can hold dissimilar data.
a. array b. structure
c. pointer d. variable
- Which operator is used to compute the integer division?
a. / b. \
c. % d. None
- Which loop is pre-test loop?
a. for loop b. while loop
c. do..while loop d. None

Group 'B'

Short Answer Questions (5 × 5 = 25)

Write short answers to the following questions:

1. What is a database? What are the objectives of a database?
2. What is transmission media? Explain any two different types of transmission media.
3. Write a structure in C to initialize item, quantity and rate and calculate total amount.
4. Describe switch case structure in JavaScript with syntax and one example
5. What is a pre-test loop? Write JavaScript codes to print given series.
1,4,9,16.....100 .

Group 'C'

Long Answer Questions (2 × 8 = 16)

Give long answer to the following questions (Any two):

1. Using Switch case , Write JavaScript codes to serve the following Book List:
a. Computer Science b. Account c. Economics d. Math's
2. Explain the different network connecting devices.
3. Write a C program to read marks of any 10 students in computer science and count how many have scored above 80.

Model Set 9

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group "A"

Multiple Choice question (9 × 1 = 9)

Tick the correct answer.

1. Which of the statements are used in DML statement?
a) Select, drop, where b) Select, insert, delete
c) Select, drop, update d) Select, insert, drop
2. With SQL, how do you select all the records from a table named "employee" where the value of column "ename" is "john"?
a) Select * from employee where ename is exactly john
b) Select * from employee where ename is equal to 'john'
c) Select * from employee where ename='john'
d) Select * from employee where ename is not in john

3. What is the first step in the software development lifecycle?
a) System design b) System testing
c) Coding d) System analysis
4. What is the minimum number of functions to be present in a C program?
a. 4 b. 1 c. 2 d. 3
5. What kind of transmission medium is most appropriate for carry data in a computer network that is exposed to electrical interferences?
a. Unshielded twisted pair b. Optical fiber
c. Coaxial cable d. Microwave
6. What should be the correct syntax to write a PHP code?
a. <php> b. <?php?>
c. <? ?> d. Php
7. Which jQuery method is used to hide selected elements?
a. hidden() b. display(none)
c. hide() d. visible(false)
8. Which Key is used to uniquely identify a record?
a. Primary Key b. Foreign Key
c. Both a. and b. d. None of the mentioned
9. Which of the following is not unguided communication media?
a. Twisted pair wire b. Satellite
c. Microwave d. Bluetooth

Group 'B'

Short Answer Questions (5 × 5 = 25)

1. Explain 1NF and 2NF with examples
OR
Demonstrate any three DDL statements with example.
2. What is OOPs? Define the terms class, polymorphism and Object. [5]
3. What do you mean by feasibility study? Why is it necessary before designing a system?[2+3]
4. What is virtual reality? Explain. [5]
5. Write a function to multiply two numbers in JavaScript. [5]
OR
Write a PHP program to multiply two numbers. [5]

Group 'C'

Long Answer Questions (2 × 8 = 16)

- Define IP address. Explain any three different types of IP address. [2+6]
- Define structure. Write a C program to store information of 10 students (eid, ename, class) and display it using structure variable. [2+6]

OR

What is pointer? Write a C program to read a 3 numbers and find its product using pointer.

Model Set 10

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group 'A'

Multiple Choice question (9 × 1 = 9)

- Which of the following is an example of DML?
a. CREATE b. UPDATE c. DROP d. ALTER
- Which query is used to select records from a table named "students" where value of column name roll_no = 02?
a. SELECT * FROM students.
b. SELECT * FROM STUDENTS WHERE roll_no = 02
c. SELECT * FROM STUDENTS HAVING roll_no = 02
d. SELECT * FROM roll_no = 02
- Which of the following is a programming language to make our webpages dynamic?
a. JavaScript b. HTML
c. CSS d. ActionScript
- In OOP the focus is given to which of the following entities?
a. Data b. Functions
c. Structure d. All of the above
- What is the tag used to insert links in HTML?
a. <a> b. <p> c. <h1> d.
- Which of the following is not a proper file operation mode?
a. close b. read c. write d. append
- Which of the following is the first step in SDLC framework?
a. Feasibility Study b. Requirement Gathering
c. Communication d. System Analysis

- MAN Stands for ____.

- Metropolitan Area Network
- Main Area Network
- Metropolitan Access Network
- Metro Access Network

- IOT stands for

- Internet of This
- Internet of That
- Internet of Things
- Internet or Thing

Group 'B'

Short Answer Questions (5 × 5 = 25)

- What is normalization. Explain its 1NF and 2NF with example.

OR

What do you mean by DDL explain with an example

- Write a program to check if a number is even or odd in JavaScript. OR

Explain what you understand by client-side scripting language and server-side scripting language.

- Describe the different features of OOP
- What do you understand by waterfall model? Explain different stages of Waterfall model.
- What do you mean by E-commerce, E-governance, E-medicine, E-banking.

Group 'C'

Long Answer Questions (2 × 8 = 16)

- What are the different network topologies explain each with 2 merits and 2 demerits?
- Write a program that reads name, roll_no, marks and address of 20 students using structure and display them.

Model Set 11

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group 'A'

Multiple Choice question (9 × 1 = 9)

- Which of the following is the DCL
a) GRAND b) SELECT c) ALTER d) CREATE
- With SQL, how do you rename "employee" table as "Dept_employee"?
a) RENAME TABLE employee to Dept_employee;
b) RENAME TABLE employee as Dept_employee;
c) RENAME employee to Dept_employee;
d) RENAME employee as Dept_employee;

3. Which of the following statement is true?
 1. Maximum 10 computers can be connected in a ring topology.
 2. $n(n-1)/2$ ports is required in each computer in mesh topology.
 3. There is no frequency distortion in digital signal.
 - a) Only 1 is true.
 - b) 1&2 is true.
 - c) 1&3 is true.
 - d) All true.
4. Linear Topology is also known as
 - a) Bus Topology
 - b) Star Topology
 - c) Ring Topology
 - d) Mesh Topology
5. the syntax of prompt box is.....?
 - a) Prompt("control Message");
 - b) prompt("control Message");
 - c) Prompt("control Message",[default_value]);
 - d) prompt("control Message",[default_value]);
6. Tag <hr> refers to as....
 - a) Horizontal range
 - b) Horizontal right
 - c) Horizontal rule
 - d) None
7. Which of the following is not the keyword in C?
 - a) for
 - b) const
 - c) extern
 - d) getch
8. There are types of transmission mode in computer network
 - a) 2
 - b) 3
 - c) 5
 - d) 8
9. Linear sequential model is also known as
 - a) Rapid development model
 - b) spiral model
 - c) agile model
 - d) classical waterfall model

Group 'B'

Short Answer Questions (5 × 5 = 25)

1. Explain 1NF and 2NF with an example.
Or
Demonstrate basic DDL statements with example.
2. Write a Program to generate Multiplication table using JavaScript.
Or
Write a Program to find whether given number palindrome is using JavaScript.

3. Differentiate between Procedural Oriented Programming and Object Oriented Programming
4. What are the different types of Implementation Method in SDLC? Explain.
5. Describe the concept of robotics and Cloud computing. (2.5+2.5)

Group 'C'

Long Answer Questions (2 × 8 = 16)

1. What is communication system? Explain all its components with necessary diagram.
2. Write a program using structure to read marks of n number of students having fields id, name, email, & roll no, store them and sort them according to name in ascending order.

OR

Write a program to read salary of 50 employees and count how many employees getting salary between 25000 to 30000.

Model Set 12

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group 'A'

Multiple Choice Question (9 × 1 = 9)

1. INSERT command is an example of
 - a) DDL
 - b) DML
 - c) DCL
 - d) None of the above
2. Truncate Command if used in table
 - a) Deletes whole table structure
 - b) only deletes columns
 - c) only deletes rows (data)
 - d) None of the above
3. Which command is used to fetch the information?
 - a) SELECT
 - b) INSERT
 - c) DROP
 - d) CREATE
4. Router resides inlayer of OSI model
 - a) physical
 - b) switch
 - c) Network
 - d) Application
5. Which tag allows you to add a row in a table?
 - a) <td> and </td>
 - b) <cr> and </cr>
 - c) <th> and </th>
 - d) <tr> and </tr>
6. There are ____ level of heading in html
 - a) Three
 - b) four
 - c) five
 - d) six
7. What will be the output of the following program?


```
#include <stdio.h>

int main() {
    int a = 3, b = 5;
```

```

int t = a;
a = b;
b = t;
printf("%d %d", a, b);
return 0;
}

```

- a) 3 5 b) 3 3 c) 5 5 d) 5 3

8. If one class have more than one superclass and inherit features from all parent classes it is known as
- a) Single Inheritance b) Hybrid Inheritance
- c) Multilevel Inheritance d) Multiple Inheritance
9. In which model project risk factor is considered
- a) Spiral model b) Waterfall model
- c) Prototyping model d) None of the above

Group 'B'

Short Answer Questions (5 × 5 = 25)

1. What is data model? Explain the types of data model in brief.
- OR
- Write down 10 differences between centralized and distributed database.
2. Write a program using javascript to find the factors of a number
- OR
- Write a javascript program using function to find the multiplication table of a number
3. What is oop? Define Abstraction and polymorphism in oop in brief.
4. What is SDLC? Explain the phases of SDLC in brief.
5. Explain Artificial Intelligence and Robotics in Brief.

Group 'C'

Long Answer Questions (2 × 8 = 16)

1. What is an Ip address? Explain Class A, Class B, Class C, Class D and Class E Ip address in brief.
2. Write down a program using structure to accept details of n number of students having field's id, name, age, address, roll no, email, store them and sort them according to name.
- Or
- Write a program to find the transpose of 2 matrixes in 2-D array.

Model Set 13

Grade: XII

Subject: Computer Science (Th)

Subject code: 428

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Time: 2 Hours

Group "A"

Multiple Choice question (9 × 1 = 9)

1. CREATE command is an example of
- a) DDL b) DML c) DCL d) None of the above
2. There is no partial dependency in
- a) 1NF b) 2NF c) 3NF d) None of the above
3. There is no transitive dependency in
- a) 1NF b) 2NF c) 3NF d) None of the above
4. Data flows in both direction in
- a) Simplex mode b) Half Duplex mode
- c) Full Duplex mode d) None of the above
5. Which one of the following is proper JavaScript variable declaration?
- a) int a =5; b) float a=5; c) const a=1.2; d) char a='s';
6. Which is used to display the text on the screen in javascript?
- a) printf b) scanf c) alert d) echo
7. Which one of the following is not a reserved keyword for C?
- a) auto b) long c) void d) structs
8. The ability to take more than one forms is known as
- a) Polymorphism b) Inheritance
- c) Abstraction d) Encapsulation
9. Internal system design is not considered in
- a) Black box testing b) White box testing
- c) Both of the above d) None of the above

Group 'B'

Short Answer Questions (5 × 5 = 25)

10. What is normalization? Explain 2NF and 3 NF with examples.
- OR
- Explain the ddl and dml statements in brief with its syntax.
11. Write a program using javascript to find the area of a rectangle
- OR
- Write a javascript program using function to find the factorial of a number.

12. What is oop? Explain Inheritance and Encapsulation with examples.
13. What is agile methodology? Explain the types of feasibility study.
14. Explain Cloud computing and IOT.

Group 'C'

Long Answer Questions (2 × 8 = 16)

15. What is transmission media? Explain the types of transmission media in brief.
16. Write down a program using structure to accept details of n number of students having field's id, name, age, address, roll no, email, store them and sort them according to age in ascending order.

NEB – Exam 2079

Computer Science (New Course) - Grade XII

(For regular students)

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

Time: 2 hrs.

Full Marks: 50

Attempt all the questions.

Group "A"

Rewrite the correct options of each questions in your answer sheet. (9×1=9)

1. Which of the following SQL statement is used to DELETE rows from a database table?
A) DELETE B) REMOVE C) DROP D) CLEAR
2. A field that is used to uniquely define a particular record in a table is called:
A) Primary Key B) Entity C) Relationship D) Constraints
3. What does "MAC" stands for in MAC Address?
A) Mandatory Access Control B) Media Access Control
C) Micro Access Control D) Media Access Certificate
4. What is the correct syntax for referring to an external JavaScript script?
A) <script src="myscript.js"></script>
B) <script href="myscript.js"></script>
C) <js href="myscript.js"></js>
D) <js src="myscript.js"></js>
5. Which of the following is the correct way of defining a variable in PHP?
A) \$variable name = value; B) \$variable_name = value;
C) \$variable_name = value D) \$variable name as value;
6. What is the output of C program?

```
void main(){ int b=25;
//b memory location=1234;
int *p; p=&b; printf("%d %d", &b, p);}
```


A) 25 25 B) 1234 1234 C) 25 1234 D) 1234 25
7. Which feature of OOP is illustrated the code reusability?
A) Polymorphism B) Abstraction
C) Encapsulation D) Inheritance

8. Which of following is the discovering requirement from a user in the requirement collection process?
- A) Feasibility study B) Requirement Elicitation
C) Requirement Specification D) Requirement validation
9. What devices are detecting and responding to changes in an environment that are embedded in smart phones and an integral part of the Internet of Things (IoT)?
- A) Wi-Fi B) Barcode C) RFID D) Sensors

Group 'B'

Short Answer Questions (5 × 5 = 25)

10. Differentiate the centralized and distributed database system.

OR

What are the purposes of normalization? Give an example of 2NF.

11. Write a program to find the factorial of any given number using Javascript.

OR

How do you fetch data from database in PHP and display it in form? Describe.

12. Compare the OOPs and procedural programming language.
13. What are the major activities performed to design the software? Describe.
14. Explain the popular five-application areas of AI.

Group 'C'

Long Answer Questions (2 × 8 = 16)

15. Compare the star and ring topology with pros and cons. Which of data communication cable is more appropriate to design the local area network? Describe. [5+3]

16. What is structure? Write a program to input roll, name and age of 5 students and display them properly using structure. [2+6]

OR

Write a C program to enter ID, employee_name, and post of the employee and store them in a data file named "emp.txt". Display each record on the screen in an appropriate format.

NEB – Exam 2080

Computer Science (New Course) - Grade XII

(For regular students)

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

Time: 2 hrs.

Full Marks: 50

Attempt all the questions.

Group "A"

- Which of the given sign is used as shortcut for JQuery?
A) The %sign B) the & sign C) The \$ sign D) the @ sign
- Which of the following is DML statement?
A) Create B) Select
C) Create view Alter D) Drop
- A collection of hyperlinked documents on the internet is called?
A) HTML B) Webpage C) WWW D) Email System
- Which of following is IPV4 address valid?
A) 192.168.1.1 B) 257.2.5.1
C) EEE.000.33.000 D) 202.70.71.262
- Which JQuery method is used to hide selected elements?
A) hide() B) hide(on) C) invisible() D) display(none)
- Which function is used to connect MySQL database?
A) mySqlLi_open() B) mySqlLi_connect()
C) var mySqlLi_query() D) \$mySqlLi_con()
- Which of the following true about FILE *fp?
a) FILE is a keyword in C for representing files and fp is a variable of FILE type
b) FILE is a stream
c) FILE is a buffered stream
d) FILE is a structure and fp is a pointer to the structure of FILE type
- Which a SDLC phase is used to ensure quality software?
B) Implementation B) Maintenance D) Testing D) System Study
- Coaxial cable is an example of
A) Communication Software B) Guided Transmission Media
C) Unguided Transmission Media D) All of the

Group 'B'

Short Answer Questions (5 × 5 = 25)

10. Explain Relational Data model with example.

OR

Write SQL DDL commands to execute the following task with reference to the schema given below:

Student_info (regno as integer, name as character (25), class integer, gender character (1), address character (25).

11. Define a Syntax for database Connectivity.

Write a server side scripting code to insert data into table student having fields (first name, last name, mark and email.) Assume that server name = "localhost", username = "root", password = "", database name = "Student DB".

12. How is event-driven program (or OOP) differing from procedural- oriented programming? Explain.
13. Explain the importance of the system testing of the system development life cycle (SDLC).
14. What is cloud Computing? Point out the advantage and disadvantage of the cloud computing.

Group 'C'

Long Answer Questions (2 × 8 = 16)

15. What is network topology? Differentiate between guided (wire media) and unguided (wireless media) with example.
16. Write the advantage of pointer. Write a C-program to enter the radius of a football and find the area of football by using user defined function.

OR

Define the structure. Write a C-program using structure to input staff id, name and the salary of 50 staffs. Display staff id, name and salary of those staff whose salary range from 25 thousand to 40 thousand.

MCQ Questions - Unit 1

- What is a DBMS?
 - Collection of interrelated data
 - Collection of programs to access data
 - Both a and b
 - None of the above
- Which of the following is NOT a type of database?
 - Hierarchical
 - Relational
 - Network
 - Distributed Computing
- What does SQL stand for?
 - Structured Query Language
 - Sequential Query Language
 - Simple Query Language
 - Standard Query Language
- In a relational database, a row is also known as:
 - Tuple
 - Attribute
 - Field
 - Domain
- Which key uniquely identifies a record in a table?
 - Foreign Key
 - Primary Key
 - Composite Key
 - Candidate Key
- What is a foreign key?
 - A key used to encrypt data
 - A key used to link two tables
 - A key that is the primary key in another table
 - Both b and c
- Which command is used to remove a table from a database?
 - DELETE TABLE
 - DROP TABLE
 - REMOVE TABLE
 - CLEAR TABLE
- What is normalization in DBMS?
 - Reducing redundancy and dependency
 - Increasing redundancy
 - Organizing data into tables
 - Both a and c
- Which of the following is a DML command?
 - SELECT
 - CREATE
 - DROP
 - ALTER
- What does ACID stand for in DBMS?
 - Atomicity, Consistency, Isolation, Durability
 - Access, Consistency, Isolation, Durability
 - Atomicity, Consistency, Integrity, Durability
 - Access, Consistency, Integrity, Durability

11. Which type of relationship is represented by a foreign key?
- a) One-to-One b) One-to-Many c) Many-to-Many d) All of the above
12. What is a view in DBMS?
- a) A virtual table b) A copy of a table c) A physical table d) None of the above
13. What is a transaction in DBMS?
- a) A single unit of work b) A collection of queries
- c) Both a and b d) None of the above
14. What is the main goal of 1NF (First Normal Form)?
- a) Eliminate duplicate rows in a table
- b) Ensure that all non-key attributes depend on the primary key
- c) Eliminate multivalued attributes
- d) Eliminate transitive dependencies
15. A table is in 2NF (Second Normal Form) if:
- a) It is in 1NF and has no partial dependency
- b) It is in 1NF and has no transitive dependency
- c) It is in 3NF and has no multivalued attributes
- d) It is in 1NF and has a composite key
16. Which of the following is an example of a violation of 2NF?
- a) A table contains a column with repeating groups
- b) A table contains a non-prime attribute that depends on part of a composite primary key
- c) A table contains transitive dependencies
- d) A table has duplicate rows
17. A table is in 3NF (Third Normal Form) if:
- a) It is in 2NF and has no transitive dependency
- b) It is in 1NF and has no partial dependency
- c) It has no multivalued attributes and no foreign keys
- d) It is in 2NF and has no composite key

18. What is a transitive dependency in normalization?
- a) A non-prime attribute depends on another non-prime attribute
- b) A primary key depends on a non-prime attribute
- c) A composite key depends on a single attribute
- d) A foreign key depends on a primary key

1. c) Both a and b	11. d) All of the above
2. d) Distributed Computing	12. a) A virtual table
3. a) Structured Query Language	13. c) Both a and b
4. a) Tuple	14. c)
5. b) Primary Key	15. a)
6. d) Both b and c	16. b)
7. b) DROP TABLE	17. a)
8. d) Both a and c	18. a)
9. a) SELECT	
10. a) Atomicity, Consistency, Isolation, Durability	

MCQ Questions - Unit 2

1. What is data communication?
 - a) Exchange of data between devices
 - b) Processing of data
 - c) Storing data
 - d) None of the above
2. Which of the following is NOT a component of data communication?
 - a) Sender
 - b) Receiver
 - c) Medium
 - d) Processor
3. What is a network?
 - a) A single computer
 - b) A group of interconnected devices
 - c) A collection of software applications
 - d) A standalone device
4. Which topology connects all devices to a central hub?
 - a) Ring
 - b) Star
 - c) Mesh
 - d) Bus
5. What does LAN stand for?
 - a) Local Area Network
 - b) Large Area Network
 - c) Logical Area Network
 - d) Long Area Network

Transmission Media

6. Which of the following is NOT a guided transmission medium?
 - a) Twisted pair cable
 - b) Fiber optic cable
 - c) Coaxial cable
 - d) Radio waves
7. What is the maximum distance of a twisted pair cable?
 - a) 100 meters
 - b) 200 meters
 - c) 500 meters
 - d) 1 kilometer
8. Which medium uses light for data transmission?
 - a) Coaxial cable
 - b) Fiber optic cable
 - c) Twisted pair cable
 - d) Satellite
9. Which of the following is a wireless transmission medium?
 - a) Radio waves
 - b) Coaxial cable
 - c) Fiber optic cable
 - d) Twisted pair cable

10. What is the main advantage of fiber optic cables?

a) Low cost b) High bandwidth c) Easy installation d) Compatibility with all devices

Protocols and Standards

11. What does TCP/IP stand for?
 - a) Transmission Control Protocol/Internet Protocol
 - b) Transfer Control Protocol/Internet Protocol
 - c) Transmission Control Packet/Internet Packet
 - d) Transfer Control Packet/Internet Packet
12. Which layer of the OSI model is responsible for routing?
 - a) Transport
 - b) Network
 - c) Data Link
 - d) Physical
13. What does HTTP stand for?
 - a) Hyper Transfer Text Protocol
 - b) Hyper Text Transfer Protocol
 - c) High Text Transfer Protocol
 - d) Hyper Text Transport Protocol
14. Which protocol is used to send email?
 - a) FTP
 - b) SMTP
 - c) HTTP
 - d) SNMP
15. Which protocol is used for file transfer?
 - a) HTTP
 - b) FTP
 - c) SMTP
 - d) SNMP
16. Which device connects two different networks?
 - a) Hub
 - b) Switch
 - c) Router
 - d) Repeater
17. What is the function of a hub?
 - a) Broadcasts data to all devices
 - b) Routes data between networks
 - c) Amplifies signals
 - d) Filters data packets
18. Which device reduces network congestion by forwarding packets selectively?
 - a) Hub
 - b) Switch
 - c) Repeater
 - d) Bridge
19. What is the main purpose of a firewall?
 - a) Amplify signals
 - b) Secure the network
 - c) Transfer files
 - d) Route data

20. Which device amplifies weak signals in a network?

a) Router b) Switch c) Repeater d) Bridge

Network Topologies

21. Which topology connects devices in a closed loop?

a) Star b) Bus c) Ring d) Mesh

22. Which topology provides the highest reliability?

a) Star b) Mesh c) Ring d) Bus

23. What is a disadvantage of the bus topology?

a) High cost b) Difficult to troubleshoot

c) Complex design d) Requires a central hub

24. In which topology does data travel in both directions along a single cable?

a) Bus b) Star c) Ring d) Mesh

25. Which topology is commonly used in home networks?

a) Star b) Bus c) Ring d) Mesh

IP Addressing and Subnetting

26. What is the size of an IPv4 address?

a) 32 bits b) 64 bits c) 128 bits d) 16 bits

27. Which IP address is used for loopback testing?

a) 192.168.1.1 b) 127.0.0.1 c) 255.255.255.255 d) 0.0.0.0

28. What is the default subnet mask for a Class C IP address?

a) 255.0.0.0 b) 255.255.0.0 c) 255.255.255.0 d) 255.255.255.255

29. What is the purpose of subnetting?

a) Increase bandwidth b) Divide a network into smaller segments

c) Improve signal strength d) Eliminate collisions

30. What is a broadcast address?

a) Address used to send data to all devices in a network

b) Address of the default gateway c) Address used for routing

d) Address used for a single device

1. a) Exchange of data between devices	16. c) Router
2. Answer: d) Processor	17. a) Broadcasts data to all devices
3. b) A group of interconnected devices	18. b) Switch
4. b) Star	19. b) Secure the network
5. a) Local Area Network	20. c) Repeater
6. d) Radio waves	21. c) Ring
7. a) 100 meters	22. b) Mesh
8. b) Fiber optic cable	23. b) Difficult to troubleshoot
9. a) Radio waves	24. a) Bus
10. b) High bandwidth	25. a) Star
11. a)	26. a) 32 bits
12. b) Network	27. b) 127.0.0.1
13. b) Hyper Text Transfer Protocol	28. c) 255.255.255.0
14. b) SMTP	29. b)
15. b) FTP	30. a)

MCQ Questions - Unit 3

1. What does HTML stand for?

- a) Hyper Text Markup Language
- b) Hyperlinks and Text Markup Language
- c) Home Tool Markup Language
- d) Hyperlink Text Management Language

2. Which tag is used to create a hyperlink in HTML?

- a) <a>
- b) <link>
- c) <href>
- d) <hyper>

3. What is the correct syntax for adding an image in HTML?

- a)
- b) <image src="image.jpg">
- c)
- d)

4. Which tag is used to create a table in HTML?

- a) <table>
- b) <tab>
- c) <tbl>
- d) <td>

5. What is the purpose of the <head> tag in HTML?

- a) To define the main content of the page
- b) To define metadata and links to external resources
- c) To display the page title
- d) To include JavaScript code

6. Which attribute is used to uniquely identify an element in HTML?

- a) class
- b) id
- c) name
- d) style

7. What is the default file extension for HTML documents?

- a) .htm
- b) .html
- c) Both a and b
- d) .web

8. Which tag is used to insert a line break in HTML?

- a)

- b) <lb>
- c) <break>
- d) <hr>

9. What is the purpose of the <form> tag in HTML?

- a) To create a clickable button
- b) To structure a webpage
- c) To collect user input
- d) To include images

10. Which tag is used to define a header in HTML?

- a) <header>
- b) <h>
- c) <head>
- d) <h1>

11. What is JavaScript primarily used for?

- a) Styling web pages
- b) Adding interactivity to web pages
- c) Structuring web pages
- d) Managing databases

12. How do you declare a variable in JavaScript?

- a) var
- b) let
- c) const
- d) All of the above

13. Which symbol is used for comments in JavaScript?

- a) //
- b) <!-- -->
- c) /* */
- d) Both a and c

14. What is the correct syntax for linking an external JavaScript file?

- a) <script href="script.js"></script>
- b) <script src="script.js"></script>
- c) <js src="script.js"></js>
- d) <javascript src="script.js"></javascript>

15. Which function is used to display data in a browser console?

- a) console.show()
- b) console.log()
- c) print()
- d) log()

16. Which method is used to select an element by its ID in JavaScript?

- a) getElementByClassName()
- b) getElementById()
- c) querySelector()
- d) getElement()

17. What is the output of typeof null in JavaScript?

- a) null
- b) undefined
- c) object
- d) string

18. Which keyword is used to define a function in JavaScript?

- a) function
- b) def
- c) func
- d) method

19. What is the result of 2 + "2" in JavaScript?

- a) 4
- b) 22
- c) undefined
- d) NaN

20. What does PHP stand for?

- a) Personal Home Page
- b) PHP Hypertext Preprocessor
- c) Preprocessor Home Page
- d) Private Home Page

21. Which symbol is used to start a PHP block?

- a) <?php
- b) <php>
- c) <?>
- d) <?PHP>

22. Which function is used to output data in PHP?

- a) print b) echo c) Both a and b d) output

23. How do you declare a variable in PHP?

- a) \$variable b) var variable c) @variable d) variable

24. Which of the following is used to include a file in PHP?

- a) include b) require c) Both a and b d) import

25. Which of the following is NOT a PHP data type?

- a) Integer b) String c) Boolean d) Character

26. What is the default extension of PHP files?

- a) .php b) .html c) .php5 d) .ph

27. Which function is used to connect to a MySQL database in PHP?

- a) mysql_connect() b) mysqli_connect() c) connect_mysql() d) connect()

28. How do you start a session in PHP?

- a) session_start() b) start_session() c) begin_session() d) session()

29. Which superglobal variable is used to collect form data in PHP?

- a) \$_POST b) \$_GET c) Both a and b d) \$_FORM

1. a) Hyper Text Markup Language	16. b) getElementById()
2. a) <a>	17. c) object
3. c)	18. a) function
4. a) <table>	19. b) 22
5. b)	20. b) PHP Hypertext Preprocessor
6. b) id	21. a) <?php
7. c) Both a and b	22. c) Both a and b
8. a) 	23. a) \$variable
9. c) To collect user input	24. c) Both a and b
10. d) <h1>	25. d) Character
11. b) Adding interactivity to web pages	26. a) .php
12. d) All of the above	27. b) mysqli_connect()
13. d) Both a and c	28. a) session_start()
14. b)	29. c) Both a and b
15. b) console.log()	

MCQ Questions - Unit 4

1. What is a function in C?

- a) A block of code that performs a specific task c) A pointer to a memory location
b) A variable used for arithmetic operations d) None of the above

2. Which keyword is used to define a function in C?

- a) func b) function c) void d) None

3. What is the default return type of a function in C?

- a) void b) int c) float d) char

4. Which of the following is NOT a valid function type in C?

- a) void b) int c) static d) float

5. What is recursion in C?

- a) A function calling another function b) A function calling itself
c) A function with no return type d) A function with multiple arguments

6. Which header file is required for mathematical functions like sqrt()?

- a) <math.h> b) <stdlib.h> c) <stdio.h> d) <string.h>

7. What is the purpose of the return statement in a function?

- a) To stop the execution of the program b) To return a value to the calling function
c) To define a function prototype d) None of the above

8. Which of the following is a valid declaration of a function?

- a) void func; b) int func(int a, int b); c) function int func(); d) void function();

9. What is a structure in C?

- a) A function that performs a specific task b) A collection of different data types
c) A type of loop d) None of the above

10. Which keyword is used to define a structure in C?

- a) struct b) structure c) record d) define

11. How do you access a member of a structure in C?

- a) Using the . operator b) Using the -> operator
c) Using the & operator d) Both a and b
12. What is the size of an empty structure in C?
a) 0 bytes b) 1 byte c) Undefined d) Compiler-dependent
13. Which of the following is NOT true about structures?
a) Structures can have different data types.
b) Structures can contain pointers.
c) Structures cannot have functions as members.
d) Structures are defined using the class keyword.
14. What is the correct way to define a structure in C?
struct Point {
 int x, y;
};
a) Correct b) Incorrect
15. What is the purpose of the typedef keyword with structures?
a) To create a pointer to the structure b) To create an alias for the structure
c) To define a new structure d) To initialize a structure
16. What is a pointer in C?
a) A variable that stores the address of another variable
b) A function that performs a specific task
c) A keyword used for memory allocation
d) None of the above
17. Which operator is used to access the value stored at the address pointed to by a pointer?
a) & b) * c) -> d) .
18. What is the size of a pointer variable in C?
a) Depends on the type of pointer b) Depends on the operating system
c) Always 4 bytes d) Always 8 bytes

19. Which of the following is a valid declaration of a pointer?
a) int *ptr; b) int ptr*; c) *int ptr; d) int ptr;
20. What does the NULL pointer represent?
a) An invalid pointer
b) A pointer that does not point to any memory location
c) A pointer to the first element of an array
d) A pointer to the last element of an array
21. What is a dangling pointer?
a) A pointer pointing to an unallocated memory location
b) A pointer pointing to a memory location that has been freed
c) A pointer pointing to itself
d) None of the above
22. Which function is used to dynamically allocate memory in C?
a) malloc() b) calloc() c) Both a and b d) free()
- File Handling**
23. What is the correct way to open a file in read mode?
a) fopen("file.txt", "r"); b) fopen("file.txt", "w");
c) fopen("file.txt", "rw"); d) fopen("file.txt", "read");
24. Which function is used to close a file in C?
a) fclose() b) close() c) fclose() d) closefile()
25. What does the fgetc() function do?
a) Reads a character from a file b) Writes a character to a file
c) Reads a string from a file d) Writes a string to a file
26. Which mode is used to append data to an existing file?
a) "r" b) "w" c) "a" d) "rw"
27. What is the return type of the fopen() function?
a) int b) FILE* c) char* d) void*

28. Which function is used to write formatted data to a file?

- a) fprintf() b) fwrite() c) fputc() d) fputs()

29. Which function is used to move the file pointer to a specific location?

- a) fseek() b) rewind() c) ftell() d) move()

1. a)	16. a)
2. d)	17. b) *
3. b) int	18. b)
4. c) static	19. a) int *ptr;
5. b) A function calling itself	20. b)
6. a) <math.h>	21. b)
7. b)	22. c) Both a and b
8. b) int func(int a, int b);	23. a) fopen("file.txt", "r");
9. b) A collection of different data types	24. c) fclose()
10. a) struct	25. a)
11. d) Both a and b	26. c) "a"
12. b) 1 byte	27. b) FILE*
13. d)	28. a) fprintf()
14. a) Correct	29. a) fseek()
15. b)	

MCQ Questions - Unit 5

1. What does OOP stand for?

- a) Object-Oriented Programming b) Object-Oriented Process
c) Objective-Oriented Programming d) None of the above

2. Which of the following is NOT a feature of OOP?

- a) Encapsulation b) Polymorphism c) Inheritance d) Compilation

3. Which OOP principle is used to hide implementation details?

- a) Inheritance b) Encapsulation c) Polymorphism d) Abstraction

4. What is an object in OOP?

- a) A variable b) An instance of a class c) A function d) A data type

5. Which of the following best defines a class in OOP?

- a) A blueprint for objects b) A specific instance of an object
c) A data type d) A function

Encapsulation

6. Encapsulation means:

- a) Wrapping data and methods into a single unit c) Overriding a method in a child class
b) Inheriting properties from a parent class d) Hiding the base class

7. Which access specifier allows members to be accessible only within the class?

- a) Public b) Private c) Protected d) Default

8. What is the primary purpose of encapsulation?

- a) Code reuse b) Data hiding c) Function overloading d) Dynamic binding

Inheritance

9. Inheritance allows:

- a) One class to acquire properties of another class
b) Wrapping data and methods into a single unit

- c) Functions to have the same name d) Hiding implementation details

10. Which keyword is used to inherit a class in C++?

- a) extends b) implements c) inherits d) :

11. Which type of inheritance involves a single class inheriting from multiple base classes?

- a) Single inheritance b) Multiple inheritance
c) Multilevel inheritance d) Hierarchical inheritance

12. What is the base class in inheritance?

- a) The class that is inherited b) The class that inherits properties
c) The class that hides data d) None of the above

Polymorphism

13. Polymorphism allows:

- a) A single function to behave differently based on input
b) Inheritance of properties c) Data hiding d) None of the above

14. Which of the following is an example of compile-time polymorphism?

- a) Function overloading b) Function overriding
c) Virtual functions d) Abstract classes

15. Which of the following is an example of runtime polymorphism?

- a) Function overloading b) Operator overloading
c) Virtual functions d) Friend functions

16. What is function overloading?

- a) Using the same function name with different parameters
b) Using multiple functions for the same operation
c) Defining a function without parameters
d) None of the above

Abstraction

17. What does abstraction mean in OOP?

- a) Hiding implementation details and showing only essential features

b) Wrapping data and methods into a single unit

c) Inheriting properties from another class

d) Overloading a function

18. Which OOP principle is achieved using abstract classes and interfaces?

- a) Encapsulation b) Inheritance c) Abstraction d) Polymorphism

19. An abstract class:

- a) Cannot have any methods b) Can have both abstract and concrete methods
c) Can only have concrete methods d) Cannot be inherited

20. What is a constructor in OOP?

- a) A special function that initializes an object b) A function that destroys an object
c) A function that hides data d) None of the above

21. What is the purpose of a destructor?

- a) To initialize an object b) To clean up resources used by an object
c) To overload a function d) To create a new object

22. Which of the following is true about constructors?

- a) They must have the same name as the class b) They must have a return type
c) They cannot be overloaded d) None of the above

23. Which of the following is NOT an OOP language?

- a) Python b) Java c) C++ d) C

24. What is the main advantage of OOP?

- a) Procedural design b) Modular and reusable code
c) Faster compilation d) None of the above

25. Which of the following is NOT a feature of C++?

- a) Inheritance b) Polymorphism c) Encapsulation d) Garbage collection

26. Which of the following supports multiple inheritance?

- a) Java b) C++ c) Python d) Both b and c

27. What is a friend function?

- a) A function that can access private and protected members of a class
b) A function that cannot be accessed outside the class
c) A function that overrides another function
d) None of the above

28. Which OOP principle focuses on reusability?

- a) Encapsulation b) Inheritance c) Abstraction d) Polymorphism

29. Which of the following is used to create an abstract class in C++?

- a) Virtual keyword b) Abstract keyword c) Interface keyword d) None of the above

1. a) Object-Oriented Programming	16. a)
2. d) Compilation	17. a)
3. b) Encapsulation	18. c) Abstraction
4. b) An instance of a class	19. b)
5. a) A blueprint for objects	20. a)
6. a)	21. b)
7. b) Private	22. a)
8. b) Data hiding	23. d) C
9. a)	24. b) Modular and reusable code
10. d) :	25. d) Garbage collection
11. b) Multiple inheritance	26. d) Both b and c
12. a) The class that is inherited	27. a)
13. a)	28. b) Inheritance
14. a) Function overloading	29. a) Virtual keyword
15. c) Virtual functions	

MCQ Questions - Unit 6

1. What is a software process model?

- a) A set of tools for software development
b) A framework for planning and managing software development
c) A coding methodology d) A database management system

2. Which of the following is NOT a software process model?

- a) Waterfall Model b) Spiral Model c) Agile Model d) ER Model

3. What is the first phase in most software process models?

- a) Coding b) Design c) Requirement Analysis d) Testing

Waterfall Model

4. Which software process model is also known as the linear sequential model?

- a) Waterfall Model b) Spiral Model c) Agile Model d) Prototype Model

5. What is a major drawback of the Waterfall Model?

- a) It is too flexible b) Difficult to implement
c) No feedback between phases d) Expensive to use

6. In the Waterfall Model, testing is performed in which phase?

- a) After coding b) After design c) After deployment d) Concurrently with coding

7. Which model delivers software in small, usable pieces?

- a) Incremental Model b) Waterfall Model c) Spiral Model d) V-Model

8. In the Incremental Model, each increment includes:

- a) Complete software b) A part of the software
c) Only testing phases d) Deployment

9. What is the main advantage of the Incremental Model?

- a) Delivers a working product early b) High risk
c) Requires less documentation d) Suitable for small projects only

Prototype Model

10. What is the Prototype Model used for?
- a) Building a working version of the complete system
 - b) Developing a temporary version to refine requirements
 - c) Ensuring parallel development
 - d) Managing risks in the project
11. What is a major benefit of the Prototype Model?
- a) Reduces customer involvement
 - b) Helps clarify requirements
 - c) Eliminates the need for testing
 - d) Ensures low cost
12. Which type of project is best suited for the Prototype Model?
- a) Projects with well-defined requirements
 - b) Projects with unclear or changing requirements
 - c) Projects with no customer involvement
 - d) Large-scale projects

Agile Model

13. What is the primary focus of the Agile Model?
- a) Flexibility and customer collaboration
 - b) Detailed documentation
 - c) Risk management
 - d) Linear development
14. Which of the following is an Agile methodology?
- a) Scrum
 - b) Spiral
 - c) V-Model
 - d) Waterfall
15. What is a sprint in Agile?
- a) A phase in the Waterfall Model
 - b) A short, time-boxed development cycle
 - c) A method of testing
 - d) A risk management activity
16. Which Agile principle emphasizes frequent delivery?
- a) Deliver working software frequently
 - b) Welcome changing requirements
 - c) Build projects around motivated individuals
 - d) Continuous attention to technical excellence

17. What is the primary deliverable in Agile?
- a) Detailed documentation
 - b) Working software
 - c) Comprehensive test plans
 - d) Risk management reports

General Questions

18. Which model requires complete requirements before starting development?
- a) Waterfall Model
 - b) Agile Model
 - c) Spiral Model
 - d) Incremental Model
19. Which software process model emphasizes customer feedback at every stage?
- a) Agile Model
 - b) Waterfall Model
 - c) V-Model
 - d) Spiral Model

1. b	11. b
2. d	12. b
3. c	13. a
4. a	14. a
5. c	15. b
6. a	16. a
7. a	17. b
8. b	18. a
9. a	19. a
10. b	

MCQ Questions - Unit 7

1. What is Artificial Intelligence (AI)?
 - a) A program that automatically fixes hardware issues
 - b) The simulation of human intelligence in machines
 - c) A technology used for physical storage
 - d) None of the above
 2. Which of the following is an example of Machine Learning?
 - a) Netflix recommendation system
 - b) Word processing software
 - c) Antivirus software
 - d) File compression tools
 3. What does NLP stand for in AI?
 - a) Neural Logic Programming
 - b) Natural Language Processing
 - c) Numeric Logic Processing
 - d) None of the above
 4. Which of the following is NOT an application of AI?
 - a) Self-driving cars
 - b) Smart assistants like Alexa
 - c) WordPad
 - d) Image recognition
 5. Which type of AI is capable of performing only specific tasks?
 - a) Narrow AI
 - b) General AI
 - c) Super AI
 - d) None of the above
- Big Data and Data Analytics
6. What is Big Data?
 - a) Large-sized data files
 - b) Vast amounts of structured and unstructured data
 - c) Data stored in physical drives
 - d) A type of database
 7. Which of the following is a popular tool for Big Data processing?
 - a) Hadoop
 - b) MySQL
 - c) Excel
 - d) PowerPoint
 8. What is the primary purpose of data analytics?
 - a) To delete unnecessary data
 - b) To derive meaningful insights from data
 - c) To store data securely
 - d) To create data backups

9. Which term describes the process of finding patterns in data?
 - a) Data Mining
 - b) Data Cleansing
 - c) Data Storage
 - d) Data Entry
10. Which programming language is commonly used for data analytics?
 - a) Python
 - b) HTML
 - c) CSS
 - d) PHP

Cloud Computing

11. What is Cloud Computing?
 - a) Storing data on physical devices
 - b) Delivering computing services over the internet
 - c) A type of hardware virtualization
 - d) A method to create databases
 12. Which of the following is a cloud computing service model?
 - a) SaaS
 - b) IoT
 - c) AI
 - d) ML
 13. Which company provides the AWS cloud platform?
 - a) Microsoft
 - b) Amazon
 - c) Google
 - d) IBM
 14. Which type of cloud is shared among multiple organizations?
 - a) Public Cloud
 - b) Private Cloud
 - c) Community Cloud
 - d) Hybrid Cloud
 15. What does IaaS stand for?
 - a) Infrastructure as a Service
 - b) Internet as a Solution
 - c) Information and Analytics System
 - d) Integrated Access System
- Internet of Things (IoT)
16. What is IoT?
 - a) A network of interconnected devices
 - b) A programming language
 - c) A type of software application
 - d) A cloud service
 17. Which of the following is an example of an IoT device?
 - a) Smart thermostat
 - b) Desktop computer
 - c) Word processor
 - d) Calculator
 18. What does IoT aim to achieve?
 - a) Secure storage of files
 - b) Seamless communication between devices
 - c) Faster internet speeds
 - d) Better hardware design

19. Which of the following is a challenge in IoT implementation?

- a) Scalability b) Security concerns c) Interoperability d) All of the above

20. What is the primary goal of cybersecurity?

- a) To speed up internet access b) To protect systems and networks from cyber threats
c) To create backup systems d) To reduce system performance

21. Which of the following is a type of malware?

- a) Virus b) Worm c) Trojan d) All of the above

22. What does a firewall do?

- a) Blocks unauthorized access to a network b) Repairs hardware issues
c) Enhances system performance d) Manages user accounts

23. What is phishing?

- a) A method to protect data b) A technique to steal sensitive information via fake emails
c) A type of encryption d) A process for data recovery

24. What does SSL stand for?

- a) Secure Sockets Layer b) System Software License
c) Secure Software Layer d) System Secure License

1. b	13. b
2. a	14. c
3. b	15. a
4. c	16. a
5. a	17. a
6. b	18. b
7. a	19. d
8. b	20. b
9. a	21. d
10. a	22. a
11. b	23. b
12. a	24. a

Normalization 1NF, 2NF and 3NF

1. First Normal Form (1NF)

First Normal Form (1NF) is the most basic of normal forms- each cell in a table (relation) must contain one value. In the 1st normal form, a composite attribute is converted to individual attributes: Some rules of 1NF:

- Each cell must contain only a single value.
- Every column in the table must be uniquely named.

Example: Let us consider an unnormalized table.

Teacher	Subject	Age	Address
QQ	Math, Physics	26	Jhapa
RR	Computer	37	Pokhara
SS	Nepali	22	Lumbini

1NF == >

Teacher	Subject	Age	Address
QQ	Math	26	Jhapa
QQ	Physics	26	Jhapa
RR	Computer	37	Pokhara
SS	Nepali	22	Lumbini

2NF == >

t_id	Teacher	Age	Address
t1	QQ	26	Jhapa
t2	RR	26	Pokhara
t3	SS	37	Lumbini

t_id	Subject
t1	Math
t2	Computer
t3	Nepali

3NF == >

t_id	Teacher	Age	Address
t1	QQ	26	Jhapa
t2	RR	26	Pokhara
t3	SS	37	Lumbini

s_id	Subject	t_id	s_id
s1	Math	t1	s1
s2	Computer	t1	s2
s3	Nepali	t2	s3
s4	English	t3	s4

Model Question

Grade: XII

Subject: Computer Science (Th)

Time: 2 Hours

Full Marks: 50 (9 marks Obj + 41 Marks Sub)

Group "A"

Multiple Choice question (9 × 1 = 9)

- Which of the following is the purpose of using primary key in database?
A) To uniquely identify a record B) To store duplicate record
C) To backup data D) To enhance database size
- A company needs to modify an existing table by adding a new column for employee email addresses. For this, which SQL command should be used?
A) CREATE B) ALTER C) SELECT D) UPDATE
- Which protocol is used for secure communication over a computer network?
A) HTTP B) FTP C) HTTPS D) Telnet
- Which control structure in JS (Java Script) is used to execute a block of code repeatedly based on a given condition?
A) For loop B) if-else C) switch-case D) Function
- Select the invalid variable name in PHP.
A) \$name B) \$_name C) \$lname D) \$name123
- The statement `int number(int a);` is a
A) function call B) function definition C) function declaration D) function execution
- In which of the following programming, the emphasis is given on data rather than on procedures?
A) Procedural programming B) Structure Programming
C) Object-oriented programming D) Declarative Programming with the available
- Which type of feasibility study evaluate whether a system can be developed with the available technology?
A) Operational feasibility B) Structural programming
C) Technical feasibility D) Declarative programming
- Which of the following is NOT a type of cloud computing service?
A) Infrastructure as a Service (IaaS) B) Platform as a Service (PaaS)
C) Software as a Service (SaaS) D) Hardware as a Service (HaaS)

Group "B"

Short answer questions [5×5=25]

- Write any three differences between DDL and DML. Give examples of each. [3+2]
OR
What is normalization? Explain 2NF and 3NF. [2+3]
- Write JavaScript code to input any three numbers and find the smallest number among them. [5]
OR
Write a PHP script to connect to a MySQL database. [5]
- Write short notes on class and inheritance in oops with example. [5]
- What is Requirement Gathering? Explain different Requirement Gathering methods. 1+4]
- What is AI? Explain application areas of AI in education. [5]

Group "C"

Long answer questions [2×8=16]

- What is transmission medium? Explain its major types with advantages and disadvantages. [2+6]
- Write a C program that reads the account number, name and address of ten customers from users and displays the account number, name and address of these customers using Array and structure. [8]
OR
What are the components of a function of C? Describe the Call - by - value and Call - by reference and passing the function parameters. [4+4]