United College

Kumaripati, Lalitpur

PRE - UNIVERSITY EXAM – 2080

Level: BCA (Vth Semester) F.M.: 60

Time: 3 hrs. P.M.: 24

Course Title: Dot Net **Date: 2080/11/21**

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

GROUP A

Attempt All Questions:

Tick the correct answer: **[10 x 1 = 10]**

1. What is used to keep track of what the customer has placed in the shopping cart while shopping online

   i) Registers ii) Proxy servers iii)spiders iv)cookies

2. The primary goal of digital signature is to

   i) encrypt data ii) authenticate the actual sender
   ii) secure communication iv) To maintain trust

3. Firewall that filters incoming and outgoing network traffic based on predefined set of rules is

   i) Packet Filtering ii) Application filtering
   iii) Circuit filtering iv) All of above

4. The ability to ensure that e-commerce participant do not deny their online actions is called

   i) Non-violation iii) Non-repudiation
   ii) Ubiquity iv) Availability

5. Has information I transmitted or received been altered? Is answered by:

   i)Authenticity ii) Privacy iii)Integrity iv)Availability

6. Digital certificate contains

   i) Public key from a certificate holder
   ii) Duration of time the certificate is valid for
   iii) User's name
   iv) All of the above

7. Retina Scanning is the _____type of biometric security

   i) Biological ii) Morphological iii) Behavioral iv)None

8. What technology allows for faster data transfer rates and improved network capacity in 4G network?

   i) CDMA ii) LTE iii) GSM iv)WiMAX

9. What is the term used for the process of increasing the website traffic through backlinks in order to improve search engine ranking?

   i. On page optimization
   ii. Off-page optimization
   iii. iii)Analytics tracking
   iv. iv)Keyword search

10. The process from procurement of raw materials to the acquisition of finished product by the end users is managed by _____system of the company.

    i) ERP ii) SCM iii) HRM iv) none

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"Group-B"

Attempt Any ***SIX Question:*** [6*5=30]

11. What do you mean by pure ecommerce and partial ecommerce? Explain with suitable examples.
12. What is digital signature? Explain the working mechanism of digital signature.
13. What is SEO? How does SEO help in the growth of the website?
14. What do you mean by cryptography? How does cryptography help in secure communication?
15. Define wireless communication? List out different wireless technologies with its importance
16. What is digital Certificates and certificate Authority? Write down the importance of digital certificates.
17. Define firewall and VPN? How do firewall and VPN help in securing ecommerce networks?
18. Classify and explain different types of websites.

"Group-C"

Attempt Any ***TWO*** Questions: [10*2=20]

19. The use of electronic payment system has significantly increased in Nepal in recent years". In this context, explain the trend of cashless transaction in Nepal along with the befits and downsides of digital payment systems and cashless economy
20. Suppose you have a business plan and you need only an e-commerce platform to implement your business plan. What steps would you perform to develop an ecommerce website?
21. What are the criteria for designing websites? What do you mean by web content? How do website visitors evaluate the web content?

ALL THE BEST

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GROUP A

Attempt All Questions:

Circle (O) the correct answer: **[10 x 1 = 10]**

1. NET Framework is an internal _____ component that supports the execution of applications created by using various programming language
   a) Internet
   b) Windows
   c) Hardware
   d) Language
2. What is CLR?
   a) Common Language Runtime
   b) Compiler Language Runtime
   c) Compiler Library Runtime
   d) Common Library Runtime
3. Which is the following is not a component of the CLR?
   a) Class loader
   b) Garbage collector
   c) .NET Framework
   d) JIT Compiler
4. Which of the following provides automatic memory management and resolves the issue of memory leaks and invalid memory references?
   a) Security engine
   b) Garbage Collector
   c) JIT Compiler
   d) Debugger
5. Code that targets the Common Language Runtime is:
   a) Unmanaged Code
   b) Distributed Code
   c) Managed Code
   d) Native Code
6. Which method has the same name as that of its class?
   a) delete
   b) class
   c) constructor
   d) none of the mentioned
7. Which operator among the following signifies the destructor operator?
   a. ::
   b. :
   c. ~
   d. &
8. Jump Statement Belongs to:
   a. Select Statement
   b. Control Statement
   c. Iteration Statement
   d. None of the mentioned.
9. C# Operators are:
   a. 2
   b. 5
   c. 6
   d. 4
10. C # Constructor Types are:
    a. 3
    b. 2
    c. 4
    d. 5

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"Group-B"

Attempt Any ***SIX Question:*** [6*5=30]

11. Differentiate Object Oriented Programming and Object Based Programming. Explain some of the major features of C# language. [2+3]
12. Explain overview of Microsoft .NET framework and its components in detail. [5]
13. What do you mean by property in C# language? How it is different from method? Compare automatic property with other types of property with suitable example. [1+1+3]
14. Define constructor. Explain different types of constructors used in C# with example. [1+4]
15. Define inheritance. Write a C# program to demonstrate multilevel and multiple inheritance. [1+2+2]
16. What is an Exception? Write a Program to generate divide by zero exception and index out of Range exception and also handle these exceptions.
17. What do you mean by lambda expression? Explain different types of lambda expression used in C# with example. [1+4]

"Group-C"

Attempt Any ***TWO*** Questions: [10*2=20]

18. What is Delegate? Write Program to Implement Delegate Program.
19.
    a) How virtual method is used to achieve dynamic binding in C#? Explain with the help of suitable program. [1+4]
    b) Define operator overloading. Write a C# program to overload Unary operator. [1+4]
20.
    a) What is LINQ? Write a program to select employees name whose name end with **"an"** [5]
    b) Write a Program, Create an Array to store your friend's Name and put 5 friends name in Array and order by descending using LINQ.

ALL THE BEST

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PRE - UNIVERSITY EXAM – 2080

Level: BCA (Vth Semester) F.M.: 60

Time: 3 hrs. P.M.: 24

Course Title: Computer Networking **Date: 2080/11/22**

Candidates are required to give the answer in their own words as far as practicable.
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GROUP A

Tick the correct answer: **[10 x 1 = 10]**

1. Which of the following best defines a network as an infrastructure for data communication?
   i. A single computer system dedicated to handling data transmission.
   ii. A collection of interconnected devices capable of sharing and transmitting data.
   iii. A software program used for organizing files and folders on a computer.
   iv. A hardware component responsible for storing large volumes of data.
2. Which layer of the OSI (Open Systems Interconnection) model is responsible for establishing, managing, and terminating connections between devices?
   i. Physical Layer iii) Data Link Layer
   ii. Transport Layer iv) Session Layer
3. Which of the following statements best describes the relationship between High-Level Data Link Control (HDLC) and Point-to-Point Protocol (PPP)?
   i. HDLC and PPP are competing standards for data link layer communication.
   ii. HDLC and PPP are both widely used protocols at the data link layer, each with its own characteristics and applications.
   iii. HDLC is a predecessor of PPP, which improved upon HDLC's capabilities and features.
   iv. HDLC and PPP are interchangeable terms referring to the same protocol used for point-to-point communication.
4. Which of the following statements accurately distinguishes between Token Bus, Token Ring, and Virtual LAN (VLAN)?
   i. Token Bus and Token Ring are both examples of physical network topologies, while VLAN is a logical network segmentation technique
   ii. Token Ring and Token Bus are both based on the use of a token-passing mechanism to control access to the network, while VLAN relies on virtualization to partition a single physical network into multiple logical networks
   iii. Token Bus and Token Ring networks use a hub-based architecture, while VLANs are typically implemented using switches
   iv. Token Ring networks are characterized by a linear topology, Token Bus networks use a ring topology, and VLANs are based on a star topology
5. Which protocol is primarily responsible for converting domain names into IP addresses on the internet?
   i. HTTP iii. FTP
   ii. DNS iv. DHCP
6. What is the primary purpose of Network Address Translation (NAT)?
   i. To encrypt data transmitted over a network
   ii. To allocate IP addresses dynamically within a network
   iii. To allow multiple devices within a private network to share a single public IP address
   iv. To determine the best path for data packets to reach their destination on the internet
7. What is a key characteristic of User Datagram Protocol (UDP)?
   i. Reliability iii) Connection-oriented
   ii. Low overhead iv) Error correction
8. Which of the following protocols is commonly used for transferring files between a client and a server?
   i. TELNET ii. SMTP iii. POP iv. FTP
9. Which protocol is commonly used for sending outgoing email messages from a client to a mail server?

i. TELNET ii. FTP iii. POP iv. SMTP

10. Which of the following network security mechanisms is primarily responsible for creating a secure tunnel between two endpoints over an untrusted network?

i. IPSec ii. VPN iii. Firewalls iv. Wireless Security

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"Group-B"

Attempt Any ***SIX Question:*** [6*5=30]

11. What do you mean by pure ecommerce and partial ecommerce? Explain with suitable examples.
12. What is Computer Network? Briefly explain any two types of computer network architecture.
13. Compare circuit switching, message switching and packet switching.
14. Discuss controlled access methods: Reservation, Polling, Token Passing.
15. Describe the IPv4 datagram format and fragmentation.
16. Discuss User Datagram Protocol (UDP) and its operations.
17. Describe the concept of traffic analyzers.
18. Discuss the advantages and disadvantages of symmetric key cryptography.

"Group-C"

Attempt Any ***TWO*** Questions: [10*2=20]

19. Critically analyze the OSI reference model.
20. Discuss classless addressing and subnetting in IPv4.
21. **Write short notes on**
    i) Telephone Network for data Communication
    ii) Digital Signature

ALL THE BEST

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PRE - UNIVERSITY EXAM – 2080

Level: BCA (Vth Semester) F.M.: 60

Time: 3 hrs. P.M.: 24

Course Title: Computer Graphic and Animation

Date: 2080/11/24

Candidates are required to give the answer in their own words as far as practicable.
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Name of Students: _____

GROUP A

Attempt All Questions:

Circle (O) the correct answer: [10 x 1 = 10]

1. Which of the following statements define Computer Graphics?
   a) It refers to designing plans
   b) It means designing computers
   c) It refers to designing images
   d) None of the mentioned
2. Which of the following is a Computer Graphics type?
   a) Raster and Vector
   b) Raster and Scalar
   c) Scalar only
   d) All of the above
3. Which of the following is the purpose for using clipping in computer graphics?
   a) copying
   b) zooming
   c) adding graphics
   d) removing objects and lines
4. In a graphical system, an array of pixels in the picture are stored in which of the following locations?
   a) Frame buffer
   b) Processor
   c) Memory
   d) All of the mentioned
5. Bitmap is a collection of _____ that describes an image.
   a) pixels
   b) algorithms
   c) bits
   d) colors
6. Which of the following algorithm is a faster method for calculating pixel positions?
   a) Parallel line algorithm
   b) Mid-point algorithm
   c) DDA line algorithm
   d) Bresenham's line algorithm
7. The Cohen-Sutherland algorithm divides the region into how many spaces?
   a) 9
   b) 8
   c) 7
   d) 6
8. 'Skala' is an example of which of the following type of clipping?
   a) polygon clipping
   b) line clipping
   c) curve clipping
   d) point clipping
9. What should be sequence of transformations that are required to perform rotation of an object around an arbitrary point?
   a) Inverse Translation, Rotation, Translation
   b) Scaling, Translation, Rotation
   c) Translation, Rotation, Inverse Translation
   d) Rotation, Translation, Scaling
10. In terms of a line, which of the following means fixed point scaling?
    a) Both endpoints of the line remains same even after scale
    b) Both endpoints of the line changes after scaling
    c) One endpoint of the line remains same after scaling
    d) The line can be scaled only till a fixed point

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GROUP B

Attempt all questions. [10 x 9 = 90]

11. Reflect a line segment having endpoints (9,3) and (12,10) about a line Y=7. Draw initial and final result graph as well.
12. Differentiate between raster and vector graphics method.
13. Find the composite transformation matrix for reflection about a line y=mx+c.
14. Trace the points along the line path having two end points (6,9) and (2,3) using DDA line drawing algorithm.
15. Write short notes on Virtual Reality with its advantages and architecture.
16. Plot the 1st octant of a circle centered at origin, having the radius 10 units.
17. Find the new c-ordinate of the triangle ABC, with co-ordinates A(0, 0), B (1, 1) and C(5, 2) after it has been magnified to twice of its size.

GROUP C

18. Explain the working details of Mid-point circle algorithm? Trace the points along the line path having two end points (15,10) and (2,28) using Bresenham's line drawing algorithm.
19. Differentiate between object space and image space methods of hidden surface removal. Describe the Z-buffer hidden surface removal algorithm.
20. Write the algorithm for Cohen-Sutherland Line clipping. Clip the polygon A(100,150), B(200,250) and C(300,200) with the clipping window defined by the coordinates (100,300), (300,300) and (200,100) using Sutherland Hodgeman Polygon Clipping algorithm.

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