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**M.Sc. (IT) (Second Semester)
EXAMINATION, May-June, 2022
Paper Third
COMPUTER NETWORKS AND DATA
COMMUNICATION
[MCS(IT)-203]**

Time : Three Hours]

[Maximum Marks : 100

[Minimum Pass Marks : 40

Note : Attempt all sections as directed.

Section - A

(Objective/Multiple Choice Questions)

(1 mark each)

Note : Attempt all questions.

Choose the correct answer:

1. What is the number of layers in the OSI model?

- (A) 2 layers
- (B) 4 layers
- (C) 7 layers
- (D) 6 layers

2. What does a set of rules define?

- (A) SMTP
- (B) FTP
- (C) IMAP
- (D) Protocol

3. Identify the first network which was based on TCP/IP protocol

- (A) ARPANET
- (B) HUB
- (C) Ethernet card
- (D) Router

4. What is the length of the IPv4 address?

- (A) 8 bits
- (B) 16 bits
- (C) 32 bits
- (D) 128 bits

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5. Which of the following is used to allocate and manage resources for a network?
- (A) Bluetooth
 - (B) Server
 - (C) Node
 - (D) None of the above
6. Who keeps the private key in asymmetric key cryptography?
- (A) Sender
 - (B) Receiver
 - (C) Both Sender and Receiver
 - (D) None
7. Bluetooth is an example of
- (A) Personal area network
 - (B) Local area network
 - (C) Virtual private network
 - (D) Wide area network
8. A..... digital signal includes timing information in the data being transmitted.
- (A) Self-synchronizing
 - (B) Self-modulated
 - (C) Self-transmitted
 - (D) None of the above

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9. The signal rate is sometimes called therate.
- (A) Baud
 - (B) Bit
 - (C) Signal
 - (D) None of the above
10. Which of the following tasks is not done by data link layer?
- (A) Framing
 - (B) Error control
 - (C) Flow control
 - (D) Channel coding
11. A network or computer network permits sharing of
- (A) Resources
 - (B) Information
 - (C) Both (A) & (B)
 - (D) None of these
12. ATM Stands for
- (A) Automatic taller machine
 - (B) Automated teller machine
 - (C) Automatic transfer machine
 - (D) Automated transfer machine

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13. is the technology that connects the machines and people within a site in a small area.
- (A) LAN
 - (B) MAN
 - (C) WAN
 - (D) None of these
14. is a collection of point to- point links that may form a circle
- (A) LAN
 - (B) MAN
 - (C) WAN
 - (D) Ring Topology
15. At the transport layer, to define the processes, we need two identifiers called
- (A) Logical addresses
 - (B) Physical addresses
 - (C) Port addresses
 - (D) None of the choices are correct
16. UDP and TCP are two protocols at thelayer
- (A) Data link
 - (B) Network
 - (C) Transport
 - (D) Application

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17. TCP is a protocol
- (A) Byte-oriented
 - (B) Message-oriented
 - (C) Block-oriented
 - (D) None of the choices are correct
18. IP is a Protocol
- (A) Connection-oriented unrediable
 - (B) Connection-oriented reliable
 - (C) Connectionless unreliable
 - (D) Connectionless reliable
19. In IEEE 802.11, distributed coordination function (DCF) uses..... as the access method.
- (A) CSMA/CA
 - (B) CSMA/CD
 - (C) ALOHA
 - (D) None of the choices are correct
20. can impair a signal.
- (A) Attenuation
 - (B) Distortion
 - (C) Noise
 - (D) All of the choices are correct

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Section - B

(Very Short Answer Type Question)

(2 marks each)

Note: -Attempt all question. Answer using 2-3 sentences.

1. What is a computer network?
2. What is OSI?
3. Define ICMP.
4. What do you mean by ARP?
5. What are the function of MAC?
6. What are the responsibilities of the network layer?
7. What is multicasting?
8. What is TCP/IP?
9. Define network congestion?
10. Explain the categories of Security Threat.

Section - C

(Short Answer Type Questions)

(3 marks each)

Note : Attempt all questions. Answer precisely using < 75 words.

1. Explain the benefits of computer networks.
2. What are the features provided by layering in OSI model?

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3. What are the two Interfaces provided by protocols?
4. What is mean by data communication and explain its characteristics?
5. What is multiplexing and explain different types of multiplexing?
6. Write about ALOHA protocols
7. What factors effect data transmission?
8. What are the major differences between LAN and WAN?
9. What are the advantages and disadvantages of star topology?
10. What are the major differences between SMDS and ISDN?

Section - D

(Long Answer Type Questions)

(6 marks each)

Note : Attempt all questions. Answer precisely using 150 words.

1. What is network topology? Discuss various type of networks topologies in computer network.
2. What is Switching? Explain the types of switching.
3. What is network security? Explain RSA algorithm.
4. What is OSI model ? Explain the functions and protocols and services of each layer?
5. Explain about the different types of connecting device in computer network.

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