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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

MCA

SEM: III - THEORY EXAMINATION (2023- 2024)

Subject: Computer Networks

Time: 3 Hours

Max. Marks: 100

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.
2. Maximum marks for each question are indicated on right -hand side of each question.
3. Illustrate your answers with neat sketches wherever necessary.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.
6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

20

1. Attempt all parts:-

- 1-a. In a _____ connection, more than two devices can share a single link. (CO1) 1
- (a) Point-to-point
 - (b) Primary
 - (c) Multi-point
 - (d) Secondary
- 1-b. The _____ layer changes bits into electromagnetic signals.(CO1) 1
- (a) Physical
 - (b) Transport
 - (c) None of the above
 - (d) Data link
- 1-c. How many octets are there in a MAC address? (CO2) 1
- (a) 6
 - (b) 5
 - (c) 4
 - (d) 8
- 1-d. MAC address stands for _____ address. (CO2) 1
- (a) Media Access Control
 - (b) Message Authentication Check
 - (c) Maximum Allowable Cost

- (d) Memory Access Controller
- 1-e. The physical address is also known as _____ - (CO3) 1
- (a) MAC address
 - (b) Loopback Address
 - (c) IP address
 - (d) broadcast address
- 1-f. Which of the following is a network layer protocol. (CO3) 1
- (a) IP
 - (b) SMTP
 - (c) HTTP
 - (d) TCP
- 1-g. A device that blocks traffic that meets certain criteria is know as a _____. (CO4) 1
- (a) Router
 - (b) Firewall
 - (c) Hub
 - (d) Switch
- 1-h. Which service ensures segments are assembled in proper order (CO4) 1
- (a) TCP
 - (b) UDP
 - (c) Both and b
 - (d) none of the above
- 1-i. Electronic mail uses which Application layer protocol? (CO5) 1
- (a) SMTP
 - (b) HTTP
 - (c) FTP
 - (d) TELNET
- 1-j. The target of the attacker is to collect (CO5) 1
- (a) username
 - (b) password
 - (c) secured information
 - (d) All of the above
2. Attempt all parts:-
- 2.a. Define simplex mode with example. (CO1) 2
- 2.b. Define Error. (CO2) 2
- 2.c. Define Delay. (CO3) 2
- 2.d. Define reassembling.(CO4) 2

2.e.	Define World Wide Web(CO5)	2
SECTION-B		30
3. Answer any <u>five</u> of the following:-		
3-a.	Differentiate Guided and unguided transmission media. Explain with suitable examples.(CO1)	6
3-b.	Differentiate between MAC address and IP address.(CO1)	6
3-c.	How do headers get added and how are they removed? (CO2)	6
3-d.	What is peer to peer architecture and where is it used? (CO2)	6
3.e.	Differentiate between Classful and Classless addresses.(CO3)	6
3.f.	Differentiate between TCP and UDP.(CO4)	6
3.g.	Differentiate between Asymmetric Cryptography and Symmetric Cryptography.(CO5)	6
SECTION-C		50
4. Answer any <u>one</u> of the following:-		
4-a.	Discuss OSI Model. Explain the functionality of each layer in detail. (CO1)	10
4-b.	Explain the following:- a) LAN b) MAN c) WAN d) ARPANET (CO1)	10
5. Answer any <u>one</u> of the following:-		
5-a.	Discuss random access protocol and explain the carrier sense multiple access with the help of an example. (CO2)	10
5-b.	Discuss Token Ring with an example.(CO2)	10
6. Answer any <u>one</u> of the following:-		
6-a.	Explain Packet Switching in detail.(CO3)	10
6-b.	Discuss Subnet mask with examples. (CO3)	10
7. Answer any <u>one</u> of the following:-		
7-a.	Discuss TCP in detail.(CO4)	10
7-b.	Discuss the techniques for improving the quality of service in detail. (CO4)	10
8. Answer any <u>one</u> of the following:-		
8-a.	Discuss Hyper Text Transfer Protocol in detail.(CO5)	10
8-b.	Discuss Electronic Mail in detail.(CO5)	10