Printed Page:- Subject Code:- AMCA0304

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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

M.C.A.

SEM: III - THEORY EXAMINATION (2022 - 2023)

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. Communication between a computer and a keyboard involves _____ transmission (CO1) 1

(a) Full-duplex

(b) Half-duplex

(c) Simplex

(d) None of these

1-b. The physical layer is concerned with the transmission of _____ over the physical medium. (CO1) 1

(a) Programs

(b) Protocols

(c) Bits

(d) Dialog

1-c. What is a cyclical redundancy check? (CO2) 1

(a) A way for two computers to synchronize their clocks

(b) The actual data being transported by an Ethernet frame

(c) A mathematical calculation used to ensure that all data arrived intact

(d) A technique that allows for multiple logical LANs to operate on the same equipment

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. Which of the following is the multiple access protocol for channel access control? (CO3) 1

(a) CSMA/CD

(b) CSMA/CA

(c) Both CSMA/CD & CSMA/CA

(d) PPP

1-f. Which one of the following is not a function of network layer? (CO3) 1

(a) routing

(b) inter-networking

(c) congestion control

(d) error control

1-g. What ordering of TCP flags makes up the Three-way Handshake? (CO4) 1

(a) SYN, SYN/ACK, ACK

(b) SYN, ACK, SYN, ACK

(c) FIN, FIN/ACK, ACK

(d) SYN, ACK, FIN

1-h. The instantiation of an endpoint in a potential TCP connection is known as a _____. (CO4) 1

(a) socket

(b) port

(c) sequence number

(d) TCP segment

1-i. Application layer offers _____ service. (CO5) 1

(a) End to end

(b) Process to process

(c) Both End to end and Process to process

(d) None of the mentioned

1-j. Electronic mail uses which Application layer protocol? (CO5) 1

(a) SMTP

(b) HTTP

(c) FTP

(d) TELNET

2. Attempt all parts:-

2.a. Define Transmission mode . (CO1) 2

2.b. Define Flow Control. (CO2) 2

2.c. Define TDM. (CO3) 2

2.d. Define reliability. (CO4) 2

2.e. Define Domain Name System. (CO5) 2

SECTION B 30

3. Answer any five of the following:-

3-a. What are the differences between MAC Sublayer and LLC sublayer in Data Link Layer? Explain the various functionalities of both sublayers. (CO1) 6

3-b. What are the three major classes of guided media? Explain each of them with suitable diagram. (CO1) 6

3-c. Mention the various architecture in LAN. (CO2) 6

3-d. Discuss the multiple access random protocols. (CO2) 6

3.e. Differentiate between ARP and RARP. (CO3) 6

3.f. Differentiate between TCP(Transmission Control Protocol) and SCTP (Stream Transmission Control Protocol). (CO4) 6

3.g. Discuss the Advantages of DNS. (CO5) 6

SECTION C 50

4. Answer any one of the following:-

4-a. Discuss TCP/IP model. Explain each layer of TCP/IP model in detail. (CO1) 10

4-b. Define computer networks? Discuss various types of networks topologies in computer network. (CO1) 10

5. Answer any one of the following:-

5-a.	Discuss Stop and wait protocol with an example. (CO2)	10
5-b.	List the various types of multiple access protocols with example. (CO2)	10

6. Answer any one of the following:-

6-a.	Explain the process of forwarding and routing with an example. (CO3)	10
6-b.	Discuss Subnet mask with examples. (CO3)	10

7. Answer any one of the following:-

7-a.	Discuss retransmission in TCP in detail. (CO4)	10
7-b.	Discuss Token Bucket Algorithm in detail. (CO4)	10

8. Answer any one of the following:-

8-a.	Discuss the passive attacks in cryptography. (CO5)	10
8-b.	Discuss the uses, needs and importance of Firewall. (CO5)	10