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MCA
(SEM III) THEORY EXAMINATION 2025-26
COMPUTER NETWORK

TIME: 3 HRS

M.MARKS: 70

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

2 x 7 = 14

Q no.	Question	CO	Level
a.	Define network topology.	1	K1
b.	Define guided transmission media.	1	K1
c.	State a parity check.	2	K2
d.	Explain checksum.	2	K2
e.	Define logical addressing.	3	K1
f.	Describe process-to-process delivery?	4	K2
g.	Explain WWW (World Wide Web).	5	K3

SECTION B

2. Attempt any three of the following:

7 x 3 = 21

a.	Explain the classification of LANs and describe wired LANs.	1	K2
b.	Compare Go-Back-N ARQ, and Selective Repeat ARQ protocols with diagrams.	2	K3
c.	Describe the IPv4 address structure, classes, and subnetting with examples.	3	K3
d.	Discuss UDP and TCP protocols with packet formats and applications	4	K2
e.	Discuss types of cryptographic attacks and their prevention techniques.	5	K2

SECTION C

3. Attempt any one part of the following:

7 x 1 = 7

a.	Explain the advantages, disadvantages, and applications of different network topologies.	1	K4
b.	Explain the TCP/IP model and compare it with the OSI model.	1	K5

4. Attempt any one part of the following:

7 x 1 = 7

a.	Discuss the ALOHA, CSMA, and CSMA/CD in detail.	2	K3
b.	Explain TDMA, FDMA, CDMA, and token passing methods.	2	K3

5. Attempt any one part of the following:

7 x 1 = 7

a.	Explain ARP and RARP protocols with examples.	3	K3
b.	Explain the purpose of BOOTP and DHCP in IP address allocation.	3	K3

6. Attempt any one part of the following:

7 x 1 = 7

a.	Explain congestion control window-based, rate-based, and traffic shaping techniques.	4	K3
b.	Describe the role of the transport layer in computer networks.	4	K4

7. Attempt any one part of the following:

7 x 1 = 7

a.	Explain the application layer and its protocols: DNS, HTTP, FTP, Email, and Remote Login.	5	K3
b.	Discuss Hyper Text Transfer Protocol (HTTP) and its request/response model.	5	K3