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MCS-218

**MASTER OF COMPUTER
APPLICATIONS
(MCA-NEW)**

**Term-End Examination
December, 2025**

**MCS-218 : DATA COMMUNICATION AND
COMPUTER NETWORKS**

Time : 3 Hours

Maximum Marks : 100

***Note :** Question No. 1 is compulsory. Attempt
any **three** questions from the rest.*

1. (a) Explain Ring and Mesh network topologies with examples. 5

- (b) Describe flow control mechanism.
Why is it necessary in data communication ? 5
- (c) Explain the differences between synchronous and asynchronous communications. 5
- (d) Write the difference between IPv4 and IPv6. 5
- (e) What is Subnetting ? What is its importance ? 5
- (f) Discuss any *two* topologies for the point-to-point subnet. 5
- (g) Write the characteristics of IOT and its applications. 5
- (h) What is MANET ? What are its applications ? 5

2. (a) What is Routing ? Explain distance vector routing algorithm. 8
- (b) Differentiate between Upward and Downward Multiplexing. 6
- (c) Draw diagram for go-back-N-ARQ and explain it. 6
3. (a) Explain the Diffie-Hellman key exchange protocol. 7
- (b) Explain attenuation and delay distortion in data transmission. 7
- (c) What is contention-based media access protocols and why are they used ? 6
4. (a) Explain TCP/IP network model with the help of a diagram. 8
- (b) Explain pipelining in the context of data retransmission strategies. 6
- (c) Describe DoS, DDoS and Phishing attacks. 6

5. (a) Explain the connection establishment and crash recovery in transport layer protocol. 8
- (b) Describe Malware and its categories. 6
- (c) Explain Delta Modulation (DM) technique with the help of a diagram. 6

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