



Seat No. : _____

DH-102

December-2025

M.Sc. (CA & IT), Sem.-III

DSC-C-IMSCIT-231T : Data Communication & Networking

Time : 2:00 Hours]

[Max. Marks : 50

1. Answer the following questions : **10**

- (A) Calculate four-bit Check sum for data 5, 9, 10, 3, 4, 6. Also verify check sum at receiver side.
- (B) Calculate CRC for data word 1111 where divisor is 1011. Also verified at receiver side.

OR

- (A) Calculate four-bit Check sum for data 4, 8, 9, 2, 3, 10. Also verify check sum at receiver side.
- (B) Calculate CRC for data word 1001 where divisor is 1011. Also verified at receiver side.

2. Answer the following questions : **10**

- (A) What is Sliding window Protocol ? Explain Go Back N ARQ protocol.
- (B) Explain Pure ALOHA protocol.

OR

- (A) Explain Selective Repeat ARQ protocol in detail.
- (B) Explain Slotted ALOHA protocol.

3. Answer the following questions : **10**

- (A) Explain CSMA/CD protocol.
- (B) Explain POLLING protocol.

OR

- (A) Explain CSMA protocol.
- (B) Explain Reservation Protocol.

4. Answer the following questions : **10**

- (A) Explain Frequency Division Multiplexing.
- (B) Explain Circuit Switching network in detail.

OR

- (A) Explain Time division Multiplexing.
- (B) Explain Packet switching network in detail.

5. Answer the following questions : [FIVE] **10**

- (1) Perform Byte stuffing for data “ALL @@THE@@ BEST##DEAR@@ STUDENTS#@@@” where # is Flag and @ is Escape.
 - (2) Perform Bit Stuffing for data “011110 0011111 0011111 111111” Where Flag is 01111110.
 - (3) Explain Transmission impairment.
 - (4) Write Network id and Host id of these IP addresses :
 - (i) 10.25.20.100
 - (ii) 130.25.10.100
 - (5) Explain FIBER OPTICS.
 - (6) Explain Data Flow Mode.
 - (7) Explain Stop & Wait Protocol.
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