No. of Printed Pages : **1**

Sl. No.

B1.5-R5 : DATA COMMUNICATIONS AND COMPUTER NETWORKS

NOTE :

1. **Answer question 1 and any FOUR from questions 2 to 7.**
2. **Parts of the same question should be answered together and in the same sequence.**

Total Time : 3 Hours **Total Marks : 100**

1. (a) What are different communication modes between two hosts ?
(b) Explain Metropolitan Area Network.
(c) Compare circuit-switched and packet-switched networks.
(d) Explain the functions of Data Link layer in brief.
(e) What are the features of Frame Relay in a Wide Area Network ?
(f) Write the short notes on Software Defined Networking (SDN).
(g) Explain the role of Quality of Service (QoS) in Computer Networks. **(7x4)**

2. (a) Relate virtual circuit and datagram networks.
(b) Discuss the difference between OSI model and TCP/IP model.
(c) Discuss connection-oriented services and its characteristics. **(6+6+6)**

3. (a) Discuss error-correcting codes.
(b) Explain Network Address Translation (NAT).
(c) Explain TCP segment header format. **(6+6+6)**

4. (a) Illustrate various multimedia communication application and its three distinguishing features.
(b) Explain new Client server application communicate using TCP in Python.
(c) Comment on Multiprotocol Label Switching (MPLS). **(8+6+4)**

5. (a) Explain leaky bucket traffic shaping mechanism.
(b) Describe TCP and its services.
(c) Describe the SNMP protocol and also define the role of manager and agent in SNMP. **(7+6+5)**

6. (a) Explain the role of RTP in multimedia communication.
(b) Describe RSVP reservation types.
(c) Explain CHECKSUM error detection method. **(6+6+6)**

7. (a) Define SDN and its future in network management.
(b) Explain Congestion Control and its types.
(c) Differentiate the Microwave and infrared unguided media. **(6+6+6)**

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