MCA/D-15

COMPUTER NETWORKS & DATA COMMUNICATION

PAPER-MCA-14-32

Time Allowed: 3 Hours Maximum Marks: 80

Note: Attempt Five questions in all, selecting at least one question from each Unit. Question No. 1 is compulsory. All questions carry equal marks.

Compulsory Question

1. Write short notes on the following :
   (a) Explain the design issue for network layer?
   (b) Describe Aloha in detail.
   (c) Discuss the two different flow control techniques.
   (d) Explain in detail about Frame relay.

UNIT-I

2. (a) Explain the model, architecture, service primitive and parameters of TCP/IP protocol.
   (b) Explain the data communications services for Broadband ISDN and ATM.
3. Define topology. Why is it needed? Discuss various network topologies with their merits and demerits.

UNIT-II

4. (a) Explain and Compare the packets switching and circuit switching techniques.
   (b) Explain the term SMDS and X.25..

5. Discuss in detail about the following Terms in detail.

   (a) Explain how the MAC protocol operates on Token Ring.
   (b) Lightwave transmission.
   (c) Transmission impairment.

UNIT-III

6. Explain in detail the working principle Sliding Window algorithm and also explain its different techniques.

7. (a) Explain the CRC error detection mechanism with an example.

(b) What is hidden station problem and exposed station problem? Explain it

(c) Explain about bit stuffing and character stuffing with example.

UNIT-IV

8. (a) Describe the working principle of distance vector routing algorithm.

(b) Compare multicasting with unicasting, multiple unicasting and broadcasting.

9. (a) Give the service provided by the UDP and also compare TCP and UDP.

(b) Explain the general principles of Congestion control. What are the different congestion avoidance mechanisms? Explain in detail.