Or

8. (a) What is congestion ? What are the causes of congestion ? Explain various types of congestion control techniques. 10

(b) Explain the pupose of transport layer and types of transport service. 10

Unit – V

9. (a) Give a brief overview of DNS. Explain label, domain name and domain by taking an example. 10

(b) Write a note on Network Security. 10

Or

10. (a) Explain the protocol SNMP. 10

(b) Explain the basic component of electronic mail. 10

Total No. of Questions : 10] [Total No. of Printed Pages : 4

Roll No. .....

MCA–305

M. C. A. (Third Semester) EXAMINATION, Dec., 2010

COMPUTER NETWORKS

(MCA – 305)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

Note : Attempt any *one* question from each Unit. All questions carry equal marks.

Unit – I

1. (a) What is modem ? Explain the types of modems based on the following basic features : 10

(i) Directional capacity

(ii) Connection to line

(iii) Transmission mode

(b) Discuss the following content :

(i) Slotted ALOHA

(ii) I Persistent CSMA

(iii) P Persistent CSMA

Or

2. (a) Explain what is pure ALOHA. Prove that the throughput of pure ALOHA occurs at G = 0·5 and the maximum throughput is 18·4%. 10

(b) Explain : 10

(i) Pulse Amplitude Modulation (PAM)

(ii) Pulse Code Modulation (PCM)

(iii) Differential Pulse Code Modulation (DPCM)

Unit – II

3. (a) Explain cyclic redundancy check (CRC). Why are these codes very popular ? Generate CRC code for data word 110101010 using the divisor 10101.

The code word received is 1100100101011. Check if there are any errors in the code word. 10

(b) Explain how hamming code can be used as error correcting code.

Detect and correct the single error in the received Hamming code word 10110010111. Assume even parity. 10

Or

4. (a) Explain sliding window flow control. What is the main advantage of using sliding window over stop and wait protocol ? Also discuss error control in sliding window mechanism. 10

(b) Calculate link utilization efficiency if :

Bit rate (R) = 19·2 kbps, Frame size (L) = 960 bits, Window size = 3, Propagation time (t_p) = 0·06 *s*.

What is the minimum window size for 100% link utilization ? 10

Unit – III

5. (a) Explain DQDB protocol. Also discuss the architecture of DQDB. 10

(b) Compare : 10

(i) Token ring IEEE 802·5 and IEEE 802·3.

(ii) Token ring IEEE 802·5 and IEEE 802·4.

Or

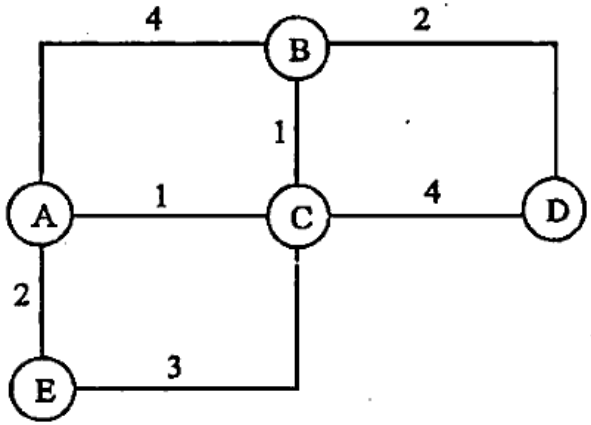
6. (a) What is FDDI ? Discuss the features of FDDI. 10

(b) What are routers and bridges ? Also compare them. 10

Unit – IV

7. (a) Explain the basic operation of link state routing. Compare distance vector protocols to link state routing protocols. 10

(b) Using Dijkstra's algorithm, determine the shortest paths from node A to the rest of the nodes of the internetwork. 10



Write the routing table of the node A.