Roll No. ....   Total Pages : 3

OMCA/M-20   **10649**

COMPUTER NETWORKS & DATA COMMUNICATION

Paper–MCA-202

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.

Compulsory Question

1.   (a)   What are point to point networks? Discuss.   3

(b)   What does the term Protocol mean?   3

(c)   Plot the Manchester and differential Manchester encoding for the bit sequence 110001010.   3

(d)   What is the difference between a passive star and an active star repeater in a Fiber optic network?   3

(e)   What is piggybacking?   3

(f)   Does the use of a wire center has any influence on the performance of a token ring?   3

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(g) Give an argument why the leaky bucket algorithm should allow just one jacket per tick, independent of how large the packet is. 3

(h) What is Multicast routing? 3

UNIT–I

2. (a) List and explain in brief the important uses of Computer networks. 7

(b) Discuss various categories of Computer networks.

7

3. Sketch the layers of OSI and TCP/IP reference models and make a distinction between the two specifying distinctly the functions of each of the layers in both the models. 14

UNIT–II

4. (a) What do you mean by Multiplexing? Discuss Synchronous and Asynchronous time division multiplexing. Also point out their disadvantages.

9

(b) Discuss Bit rate, Baud and Bandwidth. What is the baud rate of the standard 10-Mbps 802.3 LAN? 5

5. (a) Distinguish between Tisted pair cable, Co-axial cable and Optical fiber cable. 8

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(b) How is Digital data transmitted through modems? How is Modulation different from Multiplexing? 6

UNIT–III

6. (a) Explain Error-detection and correction. Give one example method for error detection and explain the importance of acknowledgement and sequence number in error control. 7

   (b) Discuss various design issues of Data Link layer.

   7

7. What is the purpose of MAC protocols? Describe any two MAC protocols in which collision can occur. 14

UNIT–IV

8. How can Congestion be controlled using Traffic Shipping? How choke packets are generated and how do they control congestion? 14

9. Differentiate between link state routing and Distance vector routing. When are flooding and shortest path routing used in link state routing? 14