MCA/M07
Computer Networks
MCA -202

Time : 3 Hours   MM:50

Note:- Attempt Five questions in all, selecting One question from each unit. All questions carry equal marks.

UNIT-I

1(i)   Sketch the architecture of TCP/IP reference model and describe the purpose of all supporting protocols of the Internet layer.

(ii)   Distinguish between point-to-point and broadcast networks on the basis of design issues.

2   Answer the following in brief.
(i)   How is data communicated through optical fibers?
(ii)   What is the advantage of Quadrature Amplitude Modulation?
(iii)   Why is packet switching considered to be more suitable for data communication than circuit switching?
3   Distinguish between:
         (i)   Radio wave and Microwave
         (ii)   FDM and TDM
          (iii)   Bit rate and Baud rate.

UNIT-II

4(i)   What do you mean by error detection and correction? Give one example method for error detection and explain the importance of acknowledgment and sequence number in error control.

(ii)   Describe any two important framing techniques and give examples of IEEE LAN standards where they are used.

5(i)   How is flow controlled using selective repeat sliding protocol? Discuss the typical situation where selective repeat protection may fail.

(ii)   How is multiplexing used in WDMA and GSM? List the control channels of GSM along with their purpose.

6   How is multiple access controlled in CSMA protocols? Why CSMA not suitable for wireless LANs? Describe one suitable MAC protocol for wireless LANs.

7   Describe the purpose of the following:
(i)   Pad field in IEEE 802.3 LANs
(ii)   Access control field in IEEE 802.5
(iii)   Logical ring maintenance of Token bus.

UNIT-III

8(a)   How is the status of network informed in distance vector routing?
 (b)   What is the purpose of sequence numbers and age field in LINK state packets?
 (c)   What is the advantage of hierarchical routing?

9(a)   How is congestion controlled using traffic shaping and choke packets?
 (b)   Describe the classful addressing of IP.

10(a)   Sketch the frame format of TCP protocol and explain the purpose of each of its
        fields.
 (b) What is the advantage of flooding and reverse path forwarding in broadcast routing?