

(4)

67144

7. (a) What is the purpose of SMSD interface protocol (SIP)? 6
- (b) What are the advantages of implementing DQDB in a ring configuration? 6
- (c) Which sliding window ARQ is more popular? Why? 4

Unit-IV

8. (a) What are the two popular approaches to packet switching? 6
- (b) How can the FECN bit inform the receiver of congestion in the network? 4
- (c) What is the purpose of subnetting? How is masking related to subnetting? 6
9. (a) What is the limiting factor in a crossbar switch? How does a multistage switch alleviate the problem? 6
- (b) Relate the TCP/IP application layer to its OSI model equivalent. 6
- (c) A message is broken up into three pieces. Discuss the transmission of the packets using a switched virtual circuit. 4

67144

67144

MCA 3rd Semester Current Scheme with new notes

Maximum Marks Scheme 80

Examination, December-2015

DATA COMMUNICATIONS AND COMPUTER

NETWORKS

Paper-MCA-304

Time allowed : 3 hours]

[Maximum marks : 80

Note : Question No. 1 is compulsory. Attempt four questions by selecting one question from each unit. All questions carry equal marks.

1. (a) Why are protocols needed ?
- (b) What is purpose of the dialog controller ?
- (c) How is QAM related to ASK and PSK ?
- (d) What is the purpose of LCN ?
- (e) Name the five categories of U-frames.
- (f) What is a crosspoint in a crossbar switch ?
- (g) Compute the baud rate for a 72,000 bps 64-QAM signal.
- (h) A signal has been received that only has values of -1, 0 and 1. Is this an analog and digital signal ?

8×2

Unit-I

2. (a) List several transmission media for networking. Explain any two media in brief. 4

67144-P-4-Q-9(15)

[P.T.O.]

- (b) What is major disadvantage in using NRZ encoding ? How do RZ encoding and biphas encoding attempt to solve the problem ? 6
- (c) Describe the layers of the atmosphere. What types of radio communication utilize each ? 6
3. (a) A light beam travels to a less dense medium. What happens to the beam in each of the following cases ?
- (i) The incident angle is less than the critical angle.
- (ii) The incident angle is equal to the critical angle.
- (iii) The incident angle is greater than the critical angle. 6
- (b) What is the formula to calculate the number of redundancy bits required to correct a bit error in a given number of data bits ? 6
- (c) Give a disadvantage for each type of network topology. 4

Unit-II

4. (a) What is the limiting factor in the size of a bus network topology ? Include a discussion of taps in your answer. 6

- (b) Do all control packets consist of just a header field ? Give an example of a control packet with a non header-type field. Give an example of a control packet with just a header field. 6
- (c) What is the difference between a service point address, a logical address and a physical address ? 4
5. (a) What is the difference between a simple bridge and a transparent bridge ? 5
- (b) What is the relationship between the ISDN layers and the OSI model layers ? 5
- (c) Who are the subscribers to a BRI ? Who are the subscribers to a PRI ? 6

Unit-III

6. (a) What are the two types of sliding window ARQ error control ? How do they differ from one another ? 8
- (b) Describe the line configuration, transmission mode, and flow and error control methods used by BSC. 8