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(4)

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

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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? 1
- (b) What is purpose of the dialog controller? 1
- (c) How is QAM related to ASK and PSK? 1
- (d) What is the purpose of LCN? 1
- (e) Name the five categories of U-frames. 1
- (f) What is a crosspoint in a crossbar switch? 1
- (g) Compute the baud rate for a 72,000 bps 64-QAM signal. 1
- (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

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- (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.

(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

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- (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

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P.T.O.