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

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

(b) What is major disadvantage in using NRZ encoding ? How do RZ encoding and biphase 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