

Roll No.....

Total Pages: 3  
**10315**

**MCA/D-17**  
**COMPUTER NETWORKS AND DATA COMMUNICATION**  
Paper: MCA-14-32

Time: Three Hours

Maximum Marks: 80

Note: Attempt five questions including No. 1 which is compulsory. All questions carry equal marks.

**Compulsory Question**

1. Answer the following in brief :
  - (a) Describe any one use of computer of networks.
  - (b) Give two characteristic features of ATM networks.
  - (c) What will be the bit rate of a channel if 4 bits are carried per baud and the baud rate is 10 bauds per second?
  - (d) Plot the Differential Manchester encoding for the bit sequence 110101000
  - (e) What is binary exponential backoff algorithm?
  - (f) How is media access controlled in token ring LAN?
  - (g) What is a virtual circuit subnet?
  - (h) What is Flooding?

**UNIT-I**

2. What is a computer network? Give a categorization of computer networks on the basis of scale, transmission technologies, topologies and design issues
3. Describe the OSI reference model along with a description of functions of each of its layers.

**UNIT-II**

4. Distinguish between :
  - (a) Synchronous and asynchronous transmission.
  - (b) Circuit switching and packet switching.

5. Describe the various transmission media used for data communication along with the application areas where they are used.

#### UNIT-III

6. Distinguish between :
  - (a) CRC and checksum methods of error detection.
  - (b) Bit-map and binary countdown protocols.
7. Describe the topology, access control, encoding, frame format, and various standards of Ethernet LAN.

#### UNIT-IV

8. Explain Distance vector and Link State Routing and bring out their distinction.
9. (a) How is routing carried out for mobile hosts?  
(b) How congestion is controlled using traffic shaping?