

2016
MCA
MCA 4.3

COMPUTER NETWORK-I

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Fill up the blanks. In
 $1 \times 5 = 5$
- a) BUS topology, at each end of the bus is a _____,
which absorbs any signal, removing it from the bus.
- b) _____ Layer decides which physical pathway the
data should take.
- c) Number of links to connect n nodes in a mesh topology is
= _____.
- d) The two alternatives for the operation of the central node
in STAR topology are: _____ and _____.
- e) Coaxial cable is suitable for use in _____ topology.
2. Answer the following(any five) $2 \times 5 = 10$
- a. What are the goals of computer networking?

- b. What role the active token monitor performs?
- c. What is piggybacking?
- d. What are the responsibilities of data link layer?
- e. What is interface in layered protocol?
- f. In which of the 7 layers of OSI will a service handling conversion of characters is from EBCDIC to ASCII be normally implemented?

3. Answer the following(any five) 4 × 5 = 20

- a) Define flow control and error control in data link layer.
- b) Differentiate between Manchester and differential Manchester Encoding methods with relevant wave forms.
- c) Describe the components of fiber optic cable. Draw a picture.
- d) Differentiate between circuit switching and packet switching.
- e) Explain twisted-pair wire? Also explain its advantages?
- f) Differentiate between simplex, half-duplex, and full-duplex modes of data Transmission.

4. What is ISO-OSI reference model? Compare it with TCP/IP reference model. Explain the function of Physical layer and Presentation layer. Which layer is used for the following :

$$2+2+2+2+2=10$$

- i. to route packets
- ii. to convert packets to frame
- iii. to detect and correct errors
- iv. to run services like FTP, Telnet etc.

5. Define Multiplexing. What are the various method of multiplexing. Explain. Why is multiplexing needed in data communication systems? 2+6+2=10

6. What do you mean by framing in data link layer? Explain various framing technique with advantage and disadvantages. 2+8=10

7. Write Short notes(Any Two) 5+5=10

- a) Token ring
- b) Wireless communication.
- c) Modem
