

TH-2 Data Communication and Computer Network

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. Classify different types of Computer Networks.
 - b. In which layer of OSI Model data can be transmitted from source to destination in the form of Frames?
 - c. Compare between Star topology and Ring topology.(any two)
 - d. Write down the various causes of transmission impairments.
 - e. Differentiate between bit rate & baud rate.(any two)
 - f. Write down the formula of Shannon capacity.
 - g. Define amplitude shift key technique used for Digital to Analog conversion.
 - h. Define checksum error detection scheme. Give an example.
 - i. Write down the various types of networking devices used in computer networking.
 - j. How many bits are used in IPv6 address?

2. Answer **Any Six** Questions 6 x 5
 - a. What do you mean by modes of data transmission? Discuss various data transmission mode
 - b. Differentiate between Guided Media and Unguided Media with example.(any five)
 - c. Define data encoding. Summarise the various mechanism that are used to convert digital data into digital signal.
 - d. Compare circuit switching and packet switching network.(any five)

 - e. Define piggybacking. Explain the working principle of piggybacking with an example.
 - f. Explain Synchronous and Asynchronous mode of data transmission.
 - g. Describe Manchester encoding technique.

3. Elaborate the layers of TCP/IP Model with a neat diagram and also mention the role of various protocols in this Model. 10

4. Define Topology. Briefly explain about different types of Topologies in Computer Network. 10

5. Define Flow Control. Describe about the techniques used in flow control. 10

6. Explain the Principles of Internetworking. Briefly Explain about IPv6 with a neat diagram. 10

7. Write the short notes on 5
 - i. Stop-and-wait protocol 5
 - ii. X.25