

**4TH SEM./APP.ELEC & INSTRU ENGG/ CSE/ECE/ETE/ IT/
MECHATRONICS/2022(S)**
Th2 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. What do you mean by subnet mask?
 - b. Differentiate between physical address and logical address of a node in a network.
 - c. Compare between star and ring topology.
 - d. What is the role of protocol in networking?
 - e. Write the functional difference between STP and UTP cable.
 - f. What do you mean by line and block coding?
 - g. Explain Nyquist theorem for channel capacity.
 - h. Write the need of multiplexing in a communication channel.
 - i. Distinguish between bit rate and baud rate.
 - j. Give two examples of half duplex and full duplex mode of communications.
2. Answer Any Six Questions 6 x 5
 - a. Illustrate different services provided by application layer in OSI model.
 - b. Describe the TCP/IP layering model.
 - c. List the difference between FDMA, TDMA and CDMA channelization techniques.
 - d. What are the transmission impairments in communication medium?
 - e. Classify synchronous and asynchronous mode of communication?
 - f. List the functions of switch, bridge and gateway.
 - g. Explain the working principle of CSMA/CD.
3. Discuss different types of physical topologies in the network with diagram. 10

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| 4 | Describe different protocols work in each layer of OSI model | 10 |
| 5 | Explain different transmission medium used in data communication. | 10 |
| 6 | Illustrate NRZ and RZ coding techniques with examples. | 10 |
| 7 | Write Short notes on (ANY TWO)
a) Bluetooth
b) WLAN
c) Parity bit
d) Frame Relay | 2X5 |