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 theorm 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

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)   2X5
         a) Bluetooth
         b)WLAN
         c) Parity bit
         d) Frame Relay