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Fourth Semester B.E. Degree Examination, Jan./Feb. 2023

Data Communication

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1. What is Data Communication? List and explain the five components of Data Communication system. (06 Marks)
- b. Explain OSI reference model with neat diagram. (10 Marks)

OR

2. a. What is Transmission Impairment? What are the causes of Impairments? (07 Marks)
- b. What is Line coding? Outline the following code using Manchester and NRZ-L coding technique:
- i) 1111 1111
- ii) 0000 0000
- iii) 0011 0011
- iv) 01010101 (09 Marks)

Module-2

3. a. Explain the technique of PCM by taking amplitude -20 and +20 and levels = 8. (10 Marks)
- b. Explain different transmission modes with diagrams. (06 Marks)

OR

4. a. With a neat diagram, explain FDM multiplexing technique. (06 Marks)
- b. What is Switching? Explain datagram network and virtual-circuit networks. (10 Marks)

Module-3

5. a. Explain with an example of block coding method of error detection and error correction. (06 Marks)
- b. Find the code word using CRC given dataword '1001' and generator '1011'. (10 Marks)

OR

6. a. Explain stop and wait ARQ protocol with neat diagram. (10 Marks)
- b. Explain frame format and transition phases of point to point protocol. (06 Marks)

Module-4

7. a. With flow diagram, explain the working of CSMA/CD. (08 Marks)
- b. Explain the following channelization techniques: i) TDMA ii) CDMA. (08 Marks)

OR

8. a. Explain the addressing mechanism of IEEE 802.11. (08 Marks)
- b. What are the different categories of standard Ethernet explain each? (08 Marks)

Module-5

9. a. Explain different categories of satellite networks. (06 Marks)
- b. With neat diagram explain IPV4 header format diagram. (07 Marks)
- c. Write a note on cellular system. (03 Marks)

OR

10. a. Explain with neat diagram frame format of IPV6 datagram. (10 Marks)
- b. Explain three different strategies devised by IETF to help the transition from IPV4 to IPV6. (06 Marks)

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