

DATA COMMUNICATION

(Common to CT, CM and IF)

Time : 3 hours

Max. marks: 100

Part – A**(Answer all questions in one or two sentences. Each question carries 2 marks)**

Marks

- I. 1. List the components of data communication.
 2. Define attenuation.
 3. Write the names of four digital signal encoding formats.
 4. Compare single bit error and burst error.
 5. List the different types of switching techniques.

(5 x 2 = 10)

PART – B**(Answer any five of the following questions. Each question carries 6 marks.)**

- II. 1. Explain categories of networks based on size, capacity and distance coverage.
 2. Draw the TCP/IP protocol suite.
 3. Compare the Terrestrial, Microwave and Satellite communication.
 4. Describe Analog data to Digital signal encoding.
 5. Explain different multiplexing techniques.
 6. Describe Simplex, Half-duplex and Full-duplex communication.
 7. Explain different polling techniques.

(5 x 6 = 30)

PART – C**(Answer one full question from each part. Each full question carries 15 marks.)****UNIT - I**

- III. a. State the need for a protocol architecture. (4)
 b. Compare the ISO-OSI layered architecture with TCP/IP architecture with the help of a neat diagram. (11)

OR

- IV. a. Distinguish between Analog and Digital data transmission. (5)
 b. i) Propose the reasons for preferring digital data transmission over analog transmission. (4)
 ii) Explain the transmission impairments affecting data transmission. (6)

UNIT II

- V. a. Explain any three applications of satellites. (3 x 2 = 6)
 b. Explain the constructional details of UTP, co-axial & optical fiber cables with diagrams. (3 x 3 = 9)

OR

- VI. a. Explain the different steps involved in Pulse Code Modulation. (10)
 b. Compare the transmission characteristics of UTP and coaxial cable. (5)

UNIT III

- VII. a. State the significance of error detection and correction in data communication. (5)
 b. Explain Bit stuffing in HDLC. (10)

OR

- VIII .a. Explain CRC error correction technique and its disadvantages. (10)
b. Explain the station types and configurations available in HDLC. (5)

UNIT IV

- IX. a. Write down the different methods of line configuration. (5)
b. Compare the different switching techniques outlining the significance of each. (10)

OR

- X. Write notes on
i) Cryptography
ii) Substitution cipher
iii) Transposition cipher (3 x 5)

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