

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2024**

DATA COMMUNICATION

[Maximum Marks: **100**]

[Time: **3 Hours**]

PART-A

[Maximum Marks: **10**]

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

1. List any two data representation forms.
2. Define data communication.
3. Define frequency of a signal.
4. Name any two technologies in guided media.
5. Write the importance of redundant bits.

(5 x 2 = 10)

PART-B

[Maximum Marks: **30**]

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

1. List and describe components of data communication.
2. Differentiate between analog and digital signals.
3. Describe Amplitude Modulation.
4. Explain briefly about UTP cable and STP cable.
5. Describe about any two unguided transmission media.
6. Explain stop and wait protocol.
7. List the type of frames in HDLC? Explain the frame format.

(5 x 6 = 30)

PART-C

[Maximum Marks: **60**]

(Answer **one** full question from each Unit. Each full question carries **15** marks)

UNIT – I

III. Explain the ISO -OSI layered architecture with a neat diagram.

(15)

OR

- IV. a. List and explain basic features of various network topologies. (8)
- b. Explain different types of transmission modes based on the direction of information. (7)

UNIT – II

- V. a. Explain pulse code modulation process. (8)
- b. Describe ASK and PSK methods. (7)

OR

- VI. a. Describe frequency division multiplexing and time division multiplexing. (8)
- b. Describe about the causes of transmission impairments of medium. (7)

UNIT- III

- VII. Explain routing of packets in Virtual Circuit Networks with an example. (15)

OR

- VIII. a. Explain about circuit switched networks. (8)
- b. List and describe advantages and disadvantages of fibre optic cable. (7)

UNIT - IV

- IX. a. Explain error control and flow control. (8)
- b. Explain the working of pure ALOHA protocol. (7)

OR

- X. a. Explain medium access control using CSMA and CSMA/CD. (8)
- b. Describe the frame format in character oriented framing protocol. (7)
