

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, APRIL- 2023**

DATA COMMUNICATION

[Maximum marks: 100]

(Time: 3 Hours)

PART – A

Maximum marks : 10

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

1. What is data communication?
2. Define bit rate.
3. Write any two disadvantages of coaxial cable.
4. Define Byte stuffing.
5. State the need 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 explain different forms of data representations.
2. Explain different network criteria.
3. Explain Amplitude Shift Keying and Frequency Shift Keying mechanisms.
4. Describe transmission impairments.
5. List advantages and disadvantages of optical fiber cables.
6. Describe about cyclic redundancy check.
7. What are the different types of errors during transmission?

(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. (a) Explain mesh topology with advantages and disadvantages.

(7)

(b) Describe about data flow (8)

OR

IV. Explain the functions of each layer in ISO-OSI reference model. (15)

UNIT-II

V. (a) Explain Pulse Code Modulation (PCM). (10)

(b) List and discuss different serial transmission methods. (5)

OR

VI. Explain different multiplexing techniques to achieve bandwidth utilization in data communication. (15)

UNIT-III

VII.(a) Write note on different methods of propagation of unguided signals. (6)

(b) Explain circuit switching with figures. (9)

OR

VIII.(a) Write note on Microwaves and Radio waves. (6)

(b) Explain virtual circuit networks. (9)

UNIT-IV

IX. Explain data link layer protocols for flow and error control in noiseless channels. (15)

OR

X.(a) Explain HDLC transfer modes and frame formats. (8)

(b) Explain how checksum is used to detect error. (7)
