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Reg. No……
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, APRIL - 2025

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 flow methods.
2. Define the term bandwidth.
3. List the names of Guided transmission media.
4. What is meant by burst error?
5. Define check sum. (5 x 2 = 10)

PART-B

[Maximum Marks: **30**]

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

1. Explain briefly components of data communication.
2. Discuss different categories of networks.
3. Briefly explain Time Division Multiplexing.
4. Give a short note on Optical fibre cables.
5. Explain the structure of a switch.
6. Explain block codes.
7. Discuss Stop and wait protocol. (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 data representation of text, numbers, images, audio and video. (9)

b. Outline network standards. (6)

OR

IV. Explain the functions of each layer in ISO OSI model with the help of a neat diagram. (15)

UNIT – II

V. a. Define the terms sine wave, Phase, Wave length, time and frequency domains, and bandwidth. (9)

b. Describe Transmission impairments and various types. (6)

OR

VI. a. **i)** Explain Analog to Analog Conversion **ii)** Digital to Analog Conversion. (8)

b. Explain Wavelength Division Multiplexing. (7)

UNIT- III

VII. a. Explain about **i)** Coaxial Cable **ii)** Twisted pair cables. (9)

b. Describe **i)** Radio Waves **ii)** Micro Waves. (6)

OR

VIII. Explain Packet switching and Describe datagram, virtual circuit. (15)

UNIT - IV

IX. Explain error detection and correction methods. (15)

OR

X. Explain **i)** ALOHA **ii)** CSMA **iii)** CSMA/CD. (15)

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