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Reg.No.....

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL-2020

DATA COMMUNICATION

[Maximum marks: 75] (Time: 2.15 Hours)

PART – A

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

I. (1). List any two data representation forms.

(2). Define protocol.

(3). Define the term *bit rate.*

(4). State the use of BNC connector.

(5). Name various types of frames defined in HDLC protocol. (3 x 2 = 6)

PART – B

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

II. (1). Describe various components of a data communication system.

(2). Discuss the process of converting an analog signal to digital using PCM.

(3). Explain synchronous TDM.

(4). State the advantages of optical fiber cable over copper cable.

(5). State the characteristics of virtual circuit networks.

(6). Describe Stop and Wait protocol for flow control. Also draw the flow diagram showing communication between two devices using this protocol.

(7). Describe the transfer modes provided by HDLC protocol. (4 x 6= 24)

PART – C

(Answer ***any of the three units*** from the following. Each question carries 15 marks)

UNIT –I

III. Draw a neat diagram of the ISO-OSI reference model and explain the functions of the Physical, Data link, Network and Transport layers. (15)

OR

IV. Explain the features of the basic network topologies with diagrams. Also state the advantages and disadvantages of each. (15)

UNIT-II

V. Explain briefly the ASK, FSK and PSK techniques with neat diagrams. (15)

OR

VI. (a). Explain asynchronous and synchronous transmission modes. (9)

(b). Describe various types of transmission impairments. (6)

UNIT-III

VII. (a). Explain the structure, types, categories and applications of Twisted Pair cable. (10)

(b). Describe the characteristic features of microwaves. (5)

OR

VIII.(a). Describe the components of a packet switch with a neat diagram. (8)

(b). Explain how packets are delivered in a diagram network, with the help of a neat diagram. (7)

UNIT-IV

IX. (a). Draw the formats of various types of HDLC frames and explain each field. (8)

(b). Explain the working of ALOHA protocol. (7)

OR

X. (a). Explain medium access control using CSMA and CSMA/CD (10)

(b). Describe the framing process in character oriented framing protocol. (5)