17430

3 Hours / 100 Marks   Seat No.

Instructions : (1) All Questions are *compulsory*.

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

Marks

1. (A) Attempt any SIX of the following :   **12**

(i) Define the term Bandwidth with an example.

(ii) List different types of communication.

(iii) What is error ? Enlist different type of errors.

(iv) What is Encapsulation ?

(v) What are the advantages of DSL ?

(vi) What is IP address ? Why it is required ?

(vii) List different network connecting devices. (any four)

(viii) Draw & define Wide Area Network.

(B) Attempt any TWO of the following :   **8**

(i) What is Multiplexing ? Give its types.

(ii) Explain the construction of Optical Fiber with neat diagram.

(iii) Write a note on ICMP.

2. **Attempt any FOUR of the following :** 16

   (a) Explain Simplex, Half duplex, Full duplex communication with examples.

   (b) State the meaning of following :

       (i) Amplitude

       (ii) Frequency

       (iii) Bit Rate

       (iv) Baud Rate

   (c) Explain the following IEEE standards :

       (i) 802.4

       (ii) 802.5

   (d) What are the standards ? Name any four standard organizations.

   (e) Explain Gigabit Ethernet in detail.

   (f) Explain Distributed Queue Dual Bus (DQDB).

3. **Attempt any FOUR of the following :** 16

   (a) Explain the architecture of Bluetooth.

   (b) Describe the leased line connection. Give its needs.

   (c) Draw the neat diagram of circuit switching. Explain in brief.

   (d) What is DNS Server ? Describe the concept of DNS.

   (e) What is Topology ? List various topologies.

   (f) Explain brief history and growth of Internet.

4. **Attempt any FOUR of the following :** 16

   (a) Draw OSI Reference Model. Describe working of any two layers.

   (b) Compare Analog Signal and Digital Signal. (any 4 points)

   (c) What is LAN ? Explain its advantages.

   (d) Explain the FDDI system.

   (e) Explain persistent TCP connection. Give its importance.

   (f) Describe the characteristics of data communication system.

5. **Attempt any FOUR of the following :** 16

   (a) Describe FTP & TFTP.

   (b) Describe the following :

      (i) Routers

      (ii) Gateways

   (c) Explain Data Fragmentation and Reassembly in detail.

   (d) State the advantages and disadvantages of Star topology.

   (e) What is WAN addressing ? Explain.

   (f) Compare TCP and UDP. (4 points)

6. **Attempt any FOUR of the following :** 16

   (a) Draw the architecture of ISP.

   (b) Describe dial-up network with its specification.

   (c) Explain Hands-off operation in Mobile phone.

(d) Draw & explain Asynchronous transmission mode.

(e) With the help of diagram explain virtual network.

(f) Compare LAN and WAN by considering following points :

    (i) Geographical area

    (ii) Speed

    (iii) Installation cost

    (iv) Communication medium

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