

17430

21819

3 Hours / 100 Marks

Seat No.

--	--	--	--	--	--	--	--	--

- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (6) Preferably, write the answers in sequential order.

Marks

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

12

- (a) Define analog signal with waveform.
- (b) Give classification of transmission media.
- (c) Name the different error detection methods.
- (d) Define peer-to-peer process.
- (e) List the networking devices with their purpose and present in which OSI layer.
- (f) State the 32-bit binary equivalent of IP address 192.168.20.254.

- (g) Compare repeater and amplifier.
- (h) Explain the role of network layer in OSI model.

(B) Attempt any TWO of the following :

8

- (a) Explain simplex, half duplex and full duplex mode of communication.
- (b) Explain circuit switching with diagram.
- (c) Describe three parts of an IP address.

2. Attempt any FOUR of the following :

16

- (a) Describe the components of data communication system and explain four characteristics of it.
- (b) Differentiate FDM & TDM.
- (c) Explain CRC with example.
- (d) Explain synchronous, asynchronous and Isochronous communication.
- (e) Draw OSI reference model. Describe the working of data link layer and transport layer.
- (f) Explain the architecture of WAN and WAN addressing.

3. Attempt any FOUR of the following :

16

- (a) Explain twisted pair cable with a diagram. State its types.
- (b) Describe cable modem with diagram.

- (c) Draw and explain mesh topology. State its merits and demerits.
- (d) Compare TCP & UDP. (any four points)
- (e) Explain Hand-off operation in mobile phone with block diagram.
- (f) Draw and explain parts of internet topology.

4. Attempt any FOUR of the following :

16

- (a) Draw Ethernet network and explain.
- (b) Define standards. List four standards organization.
- (c) Give types of MAN network and explain any one.
- (d) Draw and explain how FDDI solves network error.
- (e) Explain four features of TCP.
- (f) Explain bit rate and baud rate with suitable example.

5. Attempt any FOUR of the following :

16

- (a) Compare OSI & TCP/IP protocol suite.
- (b) Explain dial-up access for an individual user.
- (c) Draw and explain TCP packet format.
- (d) Explain Bluetooth Architecture.
- (e) List and explain functions of physical layer and network layer from OSI model.
- (f) What is DNS server ? Explain its need.

P.T.O.

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

- (a) Explain the functions and types of bridges.
 - (b) Draw and explain architecture of an ISP.
 - (c) Compare packet switching and circuit switching.
 - (d) Explain digital signal transmission with neat diagram.
 - (e) Explain router and issues involved in routing.
 - (f) Explain how session layer establishes, maintains and synchronizes the interaction between two communicating hosts.
-