

22414

24225

3 Hours / 70 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) Assume suitable data, if necessary.
(6) Use of Non-programmable Electronic Pocket Calculator is permissible.
(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Attempt any FIVE of the following :** **10**
- a) Differentiate between Analog and Digital Signal.
 - b) Define :
 - i) Bit Rate
 - ii) Baud Rate
 - c) State any two types of guided media.
 - d) List IEEE 802 × standards for networks.
 - e) Compare LRC and CRC (Any two points each).
 - f) State different types of network topologies.
 - g) List classes of IP addressing with their IP address range.

P.T.O.

2. **Attempt any THREE of the following :** **12**
- a) Compare LAN and WAN (Four points).
 - b) Describe modes of communication.
 - c) Explain bluetooth architecture.
 - d) Draw and explain TCP/IP protocol suite.
3. **Attempt any THREE of the following :** **12**
- a) Draw and explain block diagram of communication system.
 - b) Describe multiplexing technique. List it's different types.
 - c) Differentiate between hub and switch with respect to layer, port, device type, speed.
 - d) Name the protocols used in.
 - i) Data link layer
 - ii) Network layer
 - iii) Transport layer
 - iv) Presentation layer
4. **Attempt any THREE of the following :** **12**
- a) State the physical and transmission characteristic of coaxial cable along with its application.
 - b) Compare IPV4 and IPV6 packet format.
 - c) Explain satellite communication with neat diagram.
 - d) Describe OSI reference model with it's layer structure.
 - e) The following bit stream is encoded with VRC, LRC and Even parity. Locate and correct the error if it is present
- | | |
|----------|----------|
| 11000011 | 11110011 |
| 10110010 | 00001010 |
| 00101010 | 00101011 |
| 10100011 | 01001011 |
| 11100001 | |

5. Attempt any TWO of the following :**12**

- a) Draw and explain fiber-Optic cable.
- b) Explain with diagram the process of client and server and peer to peer network architecture.
- c) Explain ARP, subnetting and supernetting with example.

6. Attempt any TWO of the following :**12**

- a) Calculate CRC for the frame 110101011 and generator polynomial $X^4 + X + 1$ and write the transmitted frame.
 - b) Describe the process of DHCP server configuration.
 - c) What is the MAC protocol used in token ring LAN's? What happens if the token is lost?
-