

17429

15116

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.
- (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. a) Attempt any SIX of the following:** **12**
- (i) List advantages of computer network.
- (ii) Define the following:
- 1) Protocol
- 2) Peer
- (iii) List types of network topology. Name one device used in star topology.
- (iv) What is hub? Give types of hub.
- (v) Define guided media. List the types of guided media.
- (vi) Name the layer which is associated with the transmission media.
- (vii) Define connection oriented protocol.
- (viii) List two DHCP protocols.

P.T.O.

b) **Attempt any TWO of the following:****8**

- (i) State the reason for implementing a network. Name three key resources often shared on a network.
- (ii) Draw with neat labelled sketch of star bus topology connecting three star networks having three computers in two stars and two computers in one star.
- (iii) Explain the SLIP protocol.

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

- a) If you have two computers to connect to a network located over a long distance of 100 km, which type of transmission media, medium you will use? Justify your answer by describing its features.
- b) Explain horizontal communication and vertical communication.
- c) You are said to establish a small network with minimum cost, at least ten computers and also necessary to use the centralized database. Which type of network and topology you will prefer in this situation? Justify your answer.
- d) Explain RARP and BOOTP.
- e) What is MAC address? How it is located?
- f) Describe any four physical characteristics of fiber optic cable.

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

- a) Differentiate LAN and WAN by considering following points:
 - (i) physical area
 - (ii) installation cost
 - (iii) bandwidth
 - (iv) transmission media
- b) State two advantages of ring topology. Describe token. State whether ring topology is broadcast or point to point network.
- c) What are the different IP address classes? Explain any one in brief.
- d) Explain the following terms with respect to presentation layer:
 - (i) data encryption
 - (ii) data compression
- e) Compare ARP and RARP.
- f) State the criteria for selecting transmission media.

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

- a) Compare cable and wireless transmission.
- b) In a small agency, there are five PCs in the network. Cost is an issue and the company would prefer not to dedicate an individuals time to maintain a network. However the agency is also concerned about keeping its data safe and the users are not sophisticated computer users. In what ways is a peer to peer network appropriate for the company? In what ways it is inappropriate?
- c) Explain satellite communication with the help of neat diagram.
- d) Describe the term subnet masking.
- e) Which of the following TCP/IP transport layers is faster? Justify your answer:
 - (i) TCP
 - (ii) IP
 - (iii) UDP
- f) What do you mean by remote access?

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

- a) For following situations, state which type of network architecture is appropriate:
 - (i) Number of users 50.
 - (ii) Data and resources need to be restricted.
 - (iii) No network administrator required.
 - (iv) All users with equal priority.
- b) Explain twisted pair cable with neat sketch.
- c) State any two advantages of bus topology. Explain whether adding more computers in bus topology affects performance of network.
- d) What is meant by file sharing and printer sharing? How this can be achieved?
- e) Explain the term SMTP.
- f) Compare IPv4 and IPv6.

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

- a) Compare UDP with TCP protocols with respect to:
 - (i) complexity
 - (ii) connection
 - (iii) reliability
 - (iv) function
 - (v) which layer they exist
 - (vi) flow controlling
 - (vii) overhead
 - (viii) which is powerful
 - b) Describe gateways. State the situation under which gateways are necessary in the network.
 - c) Draw the adjacent layers in DLL in OSI reference model and describe the major functions and responsibilities of DLL. Describe two sublayers of DLL.
-