

22417

23124

3 Hours / 70 Marks

Seat No.

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- 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) 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) Enlist applications of Computer Network.
- (b) List four disadvantages of Bridges in Computer Network.
- (c) List four advantages of Ring Topology.
- (d) Draw the neat labelled diagram of OSI (Open System Interconnection) reference model.
- (e) List four Basic Network Services in Computer Network
- (f) List two transport layer protocols in Network.
- (g) Draw IPv6 Frame Format.



**2. Attempt any THREE of the following :****3 × 4 = 12**

- (a) Compare peer-to-peer Network with client-server Network (four points).
- (b) State the layer of OSI reference model in which the following devices operate :
  - (i) Repeater
  - (ii) Bridge
  - (iii) Switch
  - (iv) Hub
  - (v) Router
  - (vi) Modem
  - (vii) Gateway
  - (viii) Access point
- (c) Compare between TCP and UDP with respect to following characteristics :
  - (i) Protocol connection software
  - (ii) Data interface to application
  - (iii) Reliability
  - (iv) Overhead
- (d) State five IP address classes. Explain any two IP address class.

**3. Attempt any THREE of the following :****3 × 4 = 12**

- (a) Define the following :
  - (i) client
  - (ii) server
  - (iii) peer
  - (iv) protocol
- (b) Explain the working of NIC in LAN Network with diagram.
- (c) State the internet layer protocols in TCP/IP suite. Explain the function of ARP and ICMP.
- (d) Compare IPv4 & IPv6 address (four points).

**4. Attempt any THREE of the following :****3 × 4 = 12**

- (a) Explain the steps to take backup of data in Computer Network.
- (b) A small educational organization situated within a single building want to create a network to share the information of its 5 departments among them, for this network no centralized management is required, also no security is required. Which network is suitable for such organization ? Justify.
- (c) Draw a neat labelled sketch of hybrid topology connecting one star network of 4 computers, one ring network of 5 computers and one bus network of 5 computers.
- (d) State disadvantages of Device sharing in Network and state 4 applications of Device sharing in Network.
- (e) Explain the working of PPP (Point-to-Point) protocol in Computer Network.

**5. Attempt any TWO of the following :****2 × 6 = 12**

- (a) List 2 types of switches in Network. Explain them.
- (b) Explain the major functions of the first 6 layers of OSI model.
- (c) Define RARP. Enlist four drawbacks of RARP.

**6. Attempt any TWO of the following :****2 × 6 = 12**

- (a) Draw the neat labelled diagram of Repeater. State the situation under which repeater is necessary in Networks.
  - (b) Compare OSI reference Model and TCP/IP Protocol (six points).
  - (c) Explain the working of subnetting with diagram and example.
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