

22417

21819

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) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (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) List network classification based on network geographic area.
- (b) State any two difference between switch and Hub.
- (c) Define meaning of layered approach.
- (d) State the application of computer network. (any four)
- (e) List any four Application layer protocols.
- (f) Define IP address. State IP address classes.
- (g) Draw following topology with five Host :
  - (i) Ring
  - (ii) Mesh topology

**2. Attempt any THREE of the following :**

**12**

- (a) Draw constructional structure of fiber optic cable. Write any four features.
- (b) Draw TCP/IP reference model. Write the function of each layer.
- (c) Describe the working of following layers of OSI Model :
  - (i) Data Link layer
  - (ii) Network layer
- (d) Describe the Host - to - Network layer protocol SLIP and PPP.

- 3. Attempt any THREE of the following : 12**
- (a) State the classification of network based on :
    - (i) Transmission technology
    - (ii) Network Relationship
  - (b) Write any two specification of following :
    - (i) Switch
    - (ii) Router
  - (c) Describe Major functions of transport layer in TCP/IP model.
  - (d) Describe the function of ARP with suitable diagram.
- 4. Attempt any THREE of the following : 12**
- (a) Describe any four benefits of computer network.
  - (b) Describe star topology with suitable diagram. List two advantages of star topology.
  - (c) Write stepwise procedure to share file on network.
  - (d) Calculate broadcast address for the following :
    - (i) Network of class 'C' with network address 192.168.10.0
    - (ii) Network of class 'B' with network address 172.16.20.0
  - (e) State difference between peer to peer and client server network. (any four)
- 5. Attempt any TWO of the following : 12**
- (a) Write step wise procedure to configure DHCP server.
  - (b) State difference between IPv4 and IPv6. (any six)
  - (c) Design suitable network layout for an organization with four departments (6 users each), shared print server and a network server.
- 6. Attempt any TWO of the following : 12**
- (a) Differentiate between OSI model and TCP/IP model. (any six points)
  - (b) Design a network of class 'C' with network address 192.168.5.0 with 2 subnet. State the subnet mask and subnet address.
  - (c) Draw suitable network layout using star topology for a Computer Lab with 10 host and a wireless printer. List all components in the layout.
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