

17429

21819

3 Hours / 100 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. (A) Attempt any SIX of the following :

6 × 2 = 12

- (a) Enlist different types of computer networks on the basis of their geography.
- (b) Enlist different types of servers.
- (c) State features of any one network control devices.
- (d) State two advantages of Mesh topology.
- (e) State the reason for keeping uplink and downlink frequency different in satellite communication.
- (f) State the frequency band used for Infrared Communication and FM radio.
- (g) Define Protocol and Encapsulation.
- (h) Give two features of IPv6.

[1 of 4]

P.T.O.

(B) Attempt any TWO :**2 × 4 = 8**

- (a) Explain four features of computer networks.
- (b) State the functions of
 - (i) Repeater
 - (ii) Switch
 - (iii) Gateway
 - (iv) Bridges
- (c) It is desired to connect five computers that are joined at a single point called central node.
 - (i) Draw the setup.
 - (ii) Name the topology.
 - (iii) State two advantages and two disadvantages of this topology.

2. Attempt any FOUR :**4 × 4 = 16**

- (a) State the need for computer networks.
- (b) Compare peer to peer network and server based networks.
- (c) Explain the architecture of Bluetooth technology with suitable diagram.
- (d) Explain handoff procedure in mobile communication.
- (e) Compare LAN, WAN and MAN. (four points)
- (f) State four features of Wi-Fi.

3. Attempt any FOUR :**4 × 4 = 16**

- (a) Explain TELNET.
- (b) State any four selection criteria of a network topology.

- (c) Explain Encapsulation.
- (d) Name the protocols used in
 - (i) Data link layer
 - (ii) Network layer
 - (iii) Transport layer
 - (iv) Presentation layer
- (e) Explain Network layer of the OSI reference model.
- (f) Compare UDP and TCP.

4. Attempt any FOUR :**4 × 4 = 16**

- (a) Draw the layered architecture of TCP/IP. Explain each layer's function.
- (b) Explain sub netting and super netting.
- (c) State the performance characteristics of coaxial cable and twisted pair cable.
- (d) Explain working of ARP & RARP.
- (e) State the services provided by the transport layer of the OSI reference model.
- (f) Explain the various components of computer network.

5. Attempt any FOUR :**4 × 4 = 16**

- (a) Compare OSI and TCP/IP network model.
- (b) Explain Bus topology and Tree topology with a neat sketch.
- (c) Explain the construction of fibre optic cable with suitable diagram.
- (d) State the function of Modem. Enlist its types. Where are they used in a computer network ?
- (e) Draw the sketch of IP packet frame format in IPv4 and explain.
- (f) Draw a diagram of any hybrid topology. Explain.

P.T.O.

6. Attempt any TWO :

2 × 8 = 16

- (a) Draw the seven layered architecture of OST reference model. State the function of each layer.
 - (b) Explain the application layer protocols with block diagram :
 - (i) FTP
 - (ii) SMTP
 - (c) Draw the block diagram of satellite communication system and explain in brief. State any four frequency bands used for satellite communication.
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