12425

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.

Marks

1.   Attempt any FIVE of the following :   **10**

(a)   List any two advantages and disadvantages of Computer Network.

(b)   Describe the use of Router.

(c)   State any two basic network services.

(d)   Differentiate between LAN and WAN. (Any two points)

(e)   Define following terms :

(i)   Physical address

(ii)   Port address

(f)   List any four application layer protocol.

(g)   Draw the Star-Bus topology connecting three Star network, each star consisting of four computers.

2.   Attempt any THREE of the following :   **12**

(a)   State devices and its specifications for setting a wireless network.

(b)   Draw OSI reference model. State function of each layer.

(c)   Describe design issues for layering in Computer Network.

(d)   Differentiate between SMTP and HTTP. (Any four points)

3. **Attempt any THREE of the following :** 12

   (a) Differentiate between Client-Server and Peer-to-Peer Network. (any four points)

   (b) With suitable diagram describe Mesh Topology. Give its advantages and disadvantages.

   (c) Describe working of TCP/IP model. How its differ from OSI ?

   (d) Explain working of ARP and RARP to assign IP addresses.

4. **Attempt any THREE of the following :** 12

   (a) List and describe any four benefits of Computer Network.

   (b) Draw and explain repeater with its advantages and disadvantages.

   (c) Describe function of Datalink layer and Transport layer of OSI model.

   (d) Give class and subnet address of following IP address :

       (i) 221.45.15.68

       (ii) 128.1.1.30

       (iii) 10.145.14.68

       (iv) 191.168.0.1

   (e) Explain the concept of DNS with suitable example.

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

   (a) Describe working of TCP and UDP protocol with suitable example.

   (b) Differentiate between IPv4 & IPv6 (Any six).

   (c) Design suitable network layout for an organisation with six department (5 user each), shared printer server and network server. List all components in layout.

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

   (a) What are the services provided by the network layer of OSI model ?

   (b) Design a network of Class C with network address 192.168.10.2 with 2 subnets. State the subnet mask used and subnet addresses.

   (c) Design a network with 15 host divided into 3 equal size subnetwork each with different network topology (i.e. Bus, Star, Ring). Connect these subnetwork with suitable network device. Specify IP address to each subnetwork with its broadcast and network address.

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