22232

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.

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

Marks

1. Attempt any FIVE of the following : **5 × 2 = 10**

(a) List benefits of Computer network.

(b) State the use of NIC.

(c) List four upper most layers of OSI model.

(d) Describe the classification of Network based on transmission technology.

(e) List any four Internet Layer protocols.

(f) Define the following terms :

(i) Logical address

(ii) Port address

(g) Draw following topology with four hosts :

(i) Ring topology

(ii) Mesh topology

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

(a) Enlist different types of Bridges. Describe any two.

(b) Draw TCP/IP model. State the function of each layer.

(c) Describe design issues for layer to layer approach in Computer network. (any four)

(d) Describe the working of ARP and RARP protocol with suitable diagram.

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

(a) Describe the classification of network based on geographical area.

(b) Describe NIC and Access point. State any two differences.

(c) Describe the functions of data link layer and network layer in OSI model.

(d) Describe the Host-to-Network layer protocols SLIP and PPP.

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

(a) Define Computer Network. State the applications of computer network.

(b) Describe Star topology with suitable diagram. List two advantages of star topology.

(c) Describe the following :

(i) Interfaces

(ii) Services

(iii) Protocol

(iv) Packet

(d) Identify class for following IP address and Justify it :

(i) 10.145.14.68

(ii) 222.255.254.253

(iii) 191.168.0.1

(iv) 224.0.0.0

(e) Describe working of NOS (Network Operating System) and state its features.

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

(a) Illustrate the working of following protocol :

(i) FTP protocol

(ii) HTTP protocol

(b) Draw and describe the structure of IPV6 address format and state its advantages over IPV4.

(c) Differentiate between peer-to-peer network and client server network. (Any 6 points)

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

(a) Write a procedure for the following :

(i) To share a file

(ii) To share printer in network

(b) Design a Class 'C' Network with network address 192.156.5.0 with 2 subnets. State the subnet mask and subnet address.

(c) Draw a suitable network layout using Mesh topology to connect 8 computers. How many links are required. What are the advantages and disadvantages of this network ?
