22414

21819

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) 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) Define Computer Network and state it's types.

b) State various Computer Network applications.

c) List any four Unguided Transmission Media.

d) State types of Errors.

e) List IEEE 802 X standards for networks.

f) Compare Router and Repeater.

g) State functions of Network layer.

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

a) Classify the network based on geographical area and transmission technology.

b) Draw structural diagram of fiber optic cable and write its functions.

c) Describe various IEEE standards for network topologies.

d) Draw and explain layered architecture of OSI model.

P.T.O.

Marks

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

a) What advantages does TDM have over FDM in a circuit switched Network.

b) Compare Analog and Digital signals.

c) With suitable diagram describe:

(i) STAR topology

(ii) RING topology

d) Describe major functions of network layer in TCP/IP protocol suite.

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

a) Draw and describe architecture for network using tree topology for an office in 3-storey's building.

b) Describe functions of physical layer and data link layer of OSI model.

c) Differentiate between FDM and TDM.

d) Describe types of IP address classes.

e) Design suitable network layout for an organization with five department (ten users each)

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

a) Describe the process of data communication in various modes.

b) Why is circuit switching preferred over packet switching in voice communication?

c) Your company has the network id 165.130.0.0. You are responsible for creating subnets on the network, and each subnet must provide at least 1000 host ids.
What subnet mask meets the requirement for the minimum number of host ids and provides the highest number of subnets?

Marks

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

a) A system uses CRC on a block of 8 bytes. How many redundant bits are sent per block? What is the ratio of useful bits to the total bits?

b) Describe the process of DHCP server configuration.

c) What is the MAC protocol used in Token Ring LAN's? What happens if the token is lost?