44 (5) CPNW (O) 5.3

2021

(Held in 2022)

COMPUTER NETWORK

Paper : 5.3

(Old Course)

Full Marks : 80

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. What are the different service primitives in the OSI model for connection oriented services ? 7

2. Give very short answer of the following : ***(any two)*** 2×4=8

   (a) Explain *any one* LAN topology.

   (b) Represent the following bit string using Manchester encoding

   101011000101

(c) What are the limiting factors on transmission capacity of physical mediums ?

(d) Discuss the important features of e-mail address.

3. Answer the following questions : ***(any three)*** 5×3=15

(a) Explain collision detection using CSMA/CD.

(b) Explain working of bridges.

(c) Explain IEEE 802.3 frame format.

(d) Describe the concept of synchronous communication.

4. Answer the following questions : ***(any three)*** 10×3=30

(a) Explain the typical characteristics of a LAN in terms of addressing mechanism, topology, MAC protocol, channel capacity. 3+7=10

(b) Draw the waveform for 11001110 in each of the following encoding method :

(i) NRZ-I

(ii) NRZ-L

(iii) RZ

(iv) Differential Manchester

(c) Describe error control and flow control mechanisms used in data link layer.

(d) Discuss the important features of the following techniques :

(i) Wavelength division multiplexing

(ii) Delta modulation

5. Write short notes on : ***(any four)*** 4×5=20

(a) Modem

(b) Switch

(c) HTTP

(d) TCP model

(e) IEEE 802.11

(f) Leaky bucket algorithm
