53 (EC 604) CMNW

2021

COMMUNICATION NETWORK

Paper : EC 604 (Back)

Full Marks : 100

Time : Three hours

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

*Answer **any five** questions.*

1. *(a)* Explain character-stuffing and bit-stuffing framing methods of data link layer. 5+5=10

   (b) What are the various ICMP error-reporting messages ? 10

2. *(a)* What is the significance of domain name system (DNS) ? What is a generic domain name system ? 3+3=6

   (b) How is HTTP related to WWW ? 4

Contd.

(c) Describe the architecture of World Wide Web (WWW) being represented as a client-server system. 5

(d) Write the important features of IPv6. 5

3. (a) Describe the architecture of ATM networks. Elaborate the functionalities of its various layers. 5+7=12

(b) Discuss the three-way handshaking of connection establishment in TCP. 8

4. (a) Find the first address, last address and the range of address of the following block—200.17.29.128/27. 6

(b) Differentiate between circuit-switched and packet-switched networks. 6

(c) What is a bus topology ? Mention its merits and demerits. 3+5=8

5. (a) Differentiate between recursive resolution and iterative resolution. 8

(b) Discuss an electronic mail scheme. 10

(c) Calculate the HLEN in IPv4 value if the total length is 1200 bytes, 1176 bytes of which is data from the upper layers. 2

6. (a) Describe the IPv4 datagram header format. 10

(b) What is the functionality of Network Interface Card (NIC) used by ethernet ? What is a token-ring network ? 3+7=10

7. Differentiate between : 5×4=20

(i) TCP and IP

(ii) Hub and Switch

(iii) Unicasting, Multicasting and Broadcasting

(iv) Baseband signalling and Broadband signalling.