Total number of printed pages-3 RALLIBRA

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 bitstuffing framing methods of data link layer. 5+5=10
  - (b) What are the various ICMP error-reporting messages?
- 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.
- (d) Write the important features of IPv6.

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- 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.
  - (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.

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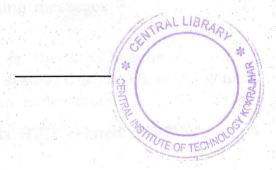
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- (c) Calculate the HLEN in IPv4 value if the total length is 1200 bytes, 1176 bytes of which is data from the upper layers.
- 6. (a) Describe the IPv4 datagram header format.
  - (b) What is the functionality of Network Interface Card (NIC) used by 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.



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