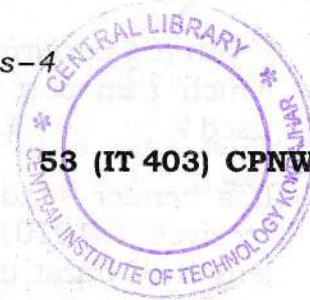


Total number of printed pages-4



2021

COMPUTER NETWORK

Paper : IT 403

Full Marks : 100

Time : Three hours

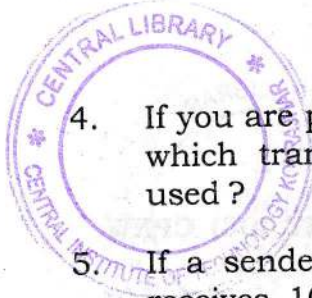
The figures in the margin indicate full marks for the questions.

PART-A

Attempt all: 2×10=20

1. In a network, when a node can send messages to a group of nodes, then it is called _____. *(Fill in the blank)*
2. How many layers are there in TCP/IP?
3. UDP is a connection _____ and _____ layer protocol. *(Fill in the blank)*

Contd.



4. If you are performing internet banking then which transport layer protocol should be used ?
5. If a sender sends 10011011 and receiver receives 10101010, then what will be the length of burst error ?
6. In data link layer, units of data are called _____.
(Fill in the blank)
7. Write the equation used to compute the latency of a network.
8. In HDLC, what are the beginning and ending bit sequences ?
9. If the I/P address of a node is 128.96.34.20 and subnet mask is 255.255.255.128, then what will be the address of the subnet ?
10. Why TTL is used ?

PART - B

Attempt **any four** :

11. (a) Represent 10101111 in NRZ and Manchester encoding. Discuss their advantages and disadvantages.
- (b) In a coaxial cable, if 10 base 5 is written, then what does it signify ?

- (c) With a diagram, discuss on fiber optics cable. $10+5+5=20$
12. (a) What is bit rate? What is baud rate? Is there any correlation among them? Discuss.
- (b) What is the utility of RTT?
- (c) Calculate the time required to transfer a 40 MB data over a channel of 1 Mbps. Consider the RTT = 20 ms and $2 \times \text{RTT}$ time is required for handshaking. $5+5+10=20$
13. (a) With diagrams, discuss the following ARQs:
- (i) Stop and Wait
 - (ii) Go-back-N
 - (iii) Selective Repeat Request
 - (iv) Sliding Window.
- (b) What is piggybacking? Discuss with an example. $16+4=20$
14. (a) How many nodes can be connected if the subnet address is 192.168.30.0 with a subnet mask of 255.255.192.0?



(b) Consider a host uses a divisor of 1101. If the host wants to transmit 11110010 and uses CRC, then what will be the code word? Discuss the process performed in the receiver side.

(c) Discuss the differences between TCP and UDP. $5+10+5=20$

15. Write short notes on : $5 \times 4 = 20$

(i) ARP

(ii) Routing table

(iii) DNS

(iv) Any one Application layer protocol.

