

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2021

Subject Code:3150710

Date:15/09/2021

Subject Name:Computer Networks

Time:10:30 AM TO 01:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		Marks
Q.1	(a) Discuss throughput in the network.	03
	(b) Differentiate TCP/IP protocol stack and OSI Reference model of the computer network.	04
	(c) How does the reservation protocol work to control access of the medium? Discuss the disadvantages of it.	07
Q.2	(a) Define Unicasting, Multicasting and Broadcasting.	03
	(b) Discriminate fully qualified domain name from partially qualified domain name.	04
	(c) How the p-persistent is different from 1-persistent in CSMA/CD? Explain how the Backoff time is set in the case of collision.	07
	OR	
	(c) Explain the working mechanism of the binary countdown protocol. Which limitation of bitmap protocol is overcome by it?	07
Q.3	(a) Bit stream 10011101 is to be transmitted using the standard CRC method with divisor value x^3+1 . Generate the CRC code word.	03
	(b) Why the virtual circuit is to be set up for transmission of message in TCP protocol?	04
	(c) Explain Distance Vector routing protocol.	07
	OR	
Q.3	(a) How the encapsulation is done in the transport layer?	03
	(b) What is subnetting? Why is it required?	04
	(c) Explain Link State routing protocol.	07
Q.4	(a) How does store-n-forward technique work at network layer?	03
	(b) Discuss the various measures which are used to compute the cost between two routers of the network.	04
	(c) Explain TCP Congestion control in detail.	07
	OR	
Q.4	(a) How many subnets can be created for the subnet mask 255.255.255.224? Which IP address class these subnet does belong to?	03
	(b) What is process-to-process delivery in transport layer? Why do we require it though host-to-host delivery is provided by the network layer?	04
	(c) Explain User Datagram Protocol.	07
Q.5	(a) Why the data encryption is necessary at the presentation layer of OSI reference model?	03
	(b) How does chock packet technique work for congestion control?	04
	(c) What is POP3 protocol? How the limitations of POP3 protocols are overcome by IMAP?	07

OR

- Q.5** (a) Why data compression is necessary at the presentation layer of OSI reference model? **03**
- (b) Differentiate Congestion control and flow control. **04**
- (c) Explain MIME structure for electronic mail. **07**

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