Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–V (NEW) EXAMINATION – WINTER 2020

Subject Code:3150710 Date:01/02/2021

Subject Name:Computer Networks

Time:10:30 AM TO 12:30 PM Total Marks: 56

Instructions:

1. **Attempt any FOUR questions out of EIGHT questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

			Marks
Q.1	**(a)**	Explain how bit rate and baud rate are related with respect to Ethernet.	**03**
	(b)	Differentiate between connection oriented versus connection less services in networks.	**04**
	(c)	Explain the working of binary count down MAC layer protocol in detail.	**07**
Q.2	**(a)**	Explain how multicasting differs from multiple unicasting in networks.	**03**
	(b)	Discriminate fully qualified domain name from partially qualified domain name.	**04**
	(c)	Explain the working of CSMA/CD protocol in detail.	**07**
Q.3	**(a)**	A Bit steam 100100 is to be transmitted using standard CRC method with divisor value x^3+x^2+1. Generate the CRC code word.	**03**
	(b)	How switch device is different from the router?	**04**
	(c)	Explain the problem of Count-to-infinity with example in distance vector routing algorithm.	**07**
Q.4	**(a)**	What is meant by encapsulation at transport layer?	**03**
	(b)	Explain flow and error control in TCP.	**04**
	(c)	What do you mean by sub-netting and super-netting? Explain it with example	**07**
Q.5	**(a)**	Explain NAT (Network Address Translation) as a solution to IP address depletion problem.	**03**
	(b)	What is the minimum and maximum size of the TCP and UDP segment?	**04**
	(c)	Explain leaky bucket algorithm for the network traffic shaping.	**07**
Q.6	**(a)**	Is deadlock possible in TCP? If yes, when?	**03**
	(b)	What is route aggregation? How it can be useful in Internet?	**04**
	(c)	Explain the significance of the following flags present in TCP segment header: 1) URG 2) ACK 3) PSH 4) RST 5) SYN 6) FIN	**07**
Q.7	**(a)**	How the Jitter is different from the delay in streaming applications?	**03**
	(b)	Explain the following TCP socket system calls: 1) socket() 2) bind() 3) listen() 4) accept()	**04**
	(c)	Give the well defined port number for the following protocols: 1) SMTP 2) DNS 3) HTTP 4) POP3 5) TELNET 6) HTTPS 7) SSH	**07**
Q.8	**(a)**	Is data compression is necessary at the presentation layer of OSI reference model? Explain it with proper reason.	**03**
	(b)	What do you mean by stream and datagram sockets?	**04**
	(c)	Explain the hierarchical DNS system	**07**

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