Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– IV EXAMINATION – SUMMER 2020

Subject Code: 2140709 **Date:02/11/2020**

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.**

			Marks
Q.1	**(a)**	Differentiate between Connection oriented and Connectionless services.	**03**
	(b)	List out & discuss various types of addresses used in internetworking.	**04**
	(c)	Draw & explain the Internet protocol stack. Write down various duties performed by each layer.	**07**
Q.2	**(a)**	What is the role of Domain Name Server (DNS) in Internet?	**03**
	(b)	Compare UDP with TCP.	**04**
	(c)	Draw & explain general format of two different types of HTTP message.	**07**
		OR	
	(c)	List out & discuss in detail various physical media used for accessing the network.	**07**
Q.3	**(a)**	Compare Go-Back-N ARQ with Selective Repeat ARQ.	**03**
	(b)	How UDP checksum value is calculated? Explain with suitable example.	**04**
	(c)	Draw & explain each field of TCP segment header.	**07**
		OR	
Q.3	**(a)**	Compare flow control with congestion control.	**03**
	(b)	Explain the concept of pipelining in brief. List any two pipelined RDT protocols.	**04**
	(c)	Explain TCP congestion control algorithm with the help of following terms & suitable diagram: 1.) Slow start, 2.) Congestion avoidance, 3.) Fast recovery, 4.) AIMD.	**07**
Q.4	**(a)**	Compare virtual-circuit networks with datagram networks.	**03**
	(b)	Briefly explain the terms: CIDR & classful addressing.	**04**
	(c)	Draw & explain each field of IPv4 datagram.	**07**
		OR	
Q.4	**(a)**	Differentiate between the forwarding and the routing.	**03**
	(b)	Draw & explain in brief router architecture.	**04**
	(c)	What is the role of routing algorithms at network layer? Illustrate the operation of Distance Vector routing algorithm for the simple 3-node network.	**07**
Q.5	**(a)**	Justify how slotted ALOHA is better than pure ALOHA.	**03**
	(b)	How DHCP works? Explain in brief.	**04**
	(c)	Draw Ethernet frame structure and explain each field in detail.	**07**
		OR	
Q.5	**(a)**	Compare physical LAN with virtual LAN.	**03**
	(b)	How ARP works? Explain in brief.	**04**
	(c)	Given the dataword 1010101010 and the divisor 10101, 1. Show the generation of codeword at the sender site. 2. Show the generation of dataword at receiver site (assuming no errors).	**07**

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