GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– VIII EXAMINATION – SUMMER 2020

Subject Code: 2171008   **Date:29/10/2020**

Subject Name: DATA COMMUNICATION AND NETWORKING

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)**	Compare PAN, LAN, MAN, & WAN in terms of geographical area covered.	**03**
	(b)	Compare circuit switching and packet switching with suitable diagram.	**04**
	(c)	Draw the OSI reference model. Write down various duties performed by each layer.	**07**
Q.2	**(a)**	Compare Go-Back-N & Selective Repeat ARQ protocols.	**03**
	(b)	List out various framing techniques. Explain any one with suitable example.	**04**
	(c)	List out and explain variants of CSMA protocol in brief.	**07**
		OR	
	(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**
Q.3	**(a)**	Justify how slotted ALOHA is better than pure ALOHA.	**03**
	(b)	Write a note on "the role of MAC sublayer in LANs".	**04**
	(c)	List out and explain various connecting devices.	**07**
		OR	
Q.3	**(a)**	Compare UDP & TCP.	**03**
	(b)	What is CIDR? Explain in brief.	**04**
	(c)	What is the role of routing algorithms at network layer? Explain Distance Vector routing algorithm in detail.	**07**
Q.4	**(a)**	Explain TCP connection establishment process with neat figure.	**03**
	(b)	Draw UDP header. List out the applications where UDP is useful.	**04**
	(c)	Draw & explain each field of IPv4 header.	**07**
		OR	
Q.4	**(a)**	Compare flow control & congestion control.	**03**
	(b)	Briefly explain virtual LAN.	**04**
	(c)	Draw & explain each field of TCP header.	**07**
Q.5	**(a)**	Compare private -key & public-key algorithms.	**03**
	(b)	How HTTP works? Explain in brief.	**04**
	(c)	Write a short note on the JPEG standard.	**07**
		OR	
Q.5	**(a)**	Draw general outline of DES algorithm.	**03**
	(b)	Write a brief note on working of E-mail using SMTP.	**04**
	(c)	Write a detailed note on firewall.	**07**

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