

**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
	<b>OR</b>	
	(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
	<b>OR</b>	
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
	<b>OR</b>	
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
	<b>OR</b>	
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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