GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV (NEW) EXAMINATION – SUMMER 2024

Subject Code:3143201   **Date:18-07-2024**

Subject Name: Data Communication & 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)**	Define Simplex, Half-Duplex and Full-Duplex.	**03**
	(b)	Differentiate circuit switched and packet switched network.	**04**
	(c)	Explain OSI Reference Model with Diagram. (Brief Description of Each Layer).	**07**
Q.2	**(a)**	Briefly differentiate GO Back N & Selective Repeat Protocol.	**03**
	(b)	Describe Physical addresses, logical addresses and port addresses	**04**
	(c)	Explain the TCP Segment structure and justify the importance of its field values.	**07**
		OR	
	(c)	What is Delay? List and Explain Types of Delays.	**07**
Q.3	**(a)**	Enlist ICMP error reporting messages and explain any one of them.	**03**
	(b)	Compare UDP and TCP.	**04**
	(c)	Explain distance vector routing with example.	**07**
		OR	
Q.3	**(a)**	Define following terms: ASK, FSK and PSK.	**03**
	(b)	Differentiate connection oriented and connection less services.	**04**
	(c)	Draw header structure of IPv4 and explain all the fields in detail.	**07**
Q.4	**(a)**	Discuss File Transfer Protocol in detail.	**03**
	(b)	Sender wants to send 10011010 to the receiver. However, 10111101 has been received. Show how the receiver will detect the error using CRC scheme if the generator used is x^3+x^2+1.	**04**
	(c)	What is Aloha Protocol? Explain Types of Aloha Protocols.	**07**
		OR	
Q.4	**(a)**	Difference between IPv4 and IPv6.	**03**
	(b)	Explain CSMA/CD and CSMA/CA in detail.	**04**
	(c)	Write a note on High Level Data Link Control (HDLC).	**07**
Q.5	**(a)**	Describe working of simple network management protocol.	**03**
	(b)	Write a short note on SNMP.	**04**
	(c)	Explain RSA algorithm with an example.	**07**
		OR	
Q.5	**(a)**	Write a short note following protocols: POP3 and IMAP.	**03**
	(b)	What is HTTP? Explain Types of HTTP Connections.	**04**
	(c)	List out MAN Protocols. Draw and explain ATM Layers.	**07**

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