Enrolment No. /Seat No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA INTEGRATED – SEMESTER IV- EXAMINATION –WINTER-2024

Subject Code:2648603   **Date: 09/12/2024**
Subject Name: Computer Networking
Time:02:30 PM TO 05:00 PM   **Total Marks: 70**
Instructions:

      1. Attempt all questions.
      2. Make Suitable assumptions wherever necessary.
      3. Figures to the right indicate full marks.
      4. Use of simple calculators and non-programmable scientific calculators are permitted.

Q.1	**(a)**	**Answer the following.**	**07**
		1. Differentiate between Half duplex and Full Duplex	
		2. What is piggybacking?	
		3. What is framing?	
		4. What is Baud Rate in Data Transmission?	
		5. What is meant by: PAN & MAN	
		6. Define: Wavelength & Frequency	
		7. What is Fiber Optics?	
	(b)	Explain TCP/IP reference model with its all Layers in detail.	**07**
Q.2	**(a)**	Explain Propagation mode of Fiber Optic cable.	**07**
	(b)	List different types of transmission media. Discuss advantages and disadvantages of fiber Optics over the copper wire.	**07**
		OR	
	(b)	What is electromagnetic spectrum? What are radio waves & Micro waves?	**07**
Q.3	**(a)**	Explain CRC for error detection with suitable example.	**07**
	(b)	(1) Compare Selective Repeat and Go back N	**04**
		(2) Compare Data link layer and transport layer	**03**
		OR	
Q.3	**(a)**	Explain Non persistent, 1-persistent and P-persistent CSMA protocol.	**07**
	(b)	What is hamming code? Calculate hamming code for the message 10010110.	**07**
Q.4	**(a)**	Write a short note on Aloha & Slotted Aloha.	**07**
	(b)	What is three-way handshake? Explain how three-way handshake solves delayed duplicate problem.	**07**
		OR	
Q.4	**(a)**	What are the duties of transport layer? Compare those with that of data link layer.	**07**
	(b)	What is IPSec? Discuss its usefulness?	**07**
Q.5	**(a)**	Compare Virtual-Circuit Network and Datagram Network	**07**
	(b)	Explain Bluetooth Architecture in detail. Also explain Protocol Stack of Bluetooth technology.	**07**
		OR	
Q.5	**(a)**	What is congestion? How is congestion controlled in virtual circuit Network?	**07**
	(b)	Explain Domain Name System (DNS) with the importance of resource record. Explain any four resource records.	**07**

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