

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER - II EXAMINATION - WINTER 2025

Subject Code: MC02094031

Date: 18-11-2025

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.**

	Marks
Q.1 (a) Distinguish between connection-oriented and connection-less service.	07
(b) List the main steps involved in the stop-and-wait protocol.	07
Q.2 (a) Apply checksum method to detect errors in a transmitted data frame; to apply the method assumes any data frame that you wish.	07
(b) Explain twisted pair cable with appropriate diagram.	07
OR	
(b) Apply the concept of the sliding window protocol to improve data transfer over a noisy channel.	07
Q.3 (a) Explain distance vector routing algorithm.	07
(b) Explain transport service primitives.	07
OR	
(a) Design a connection establishment scenario in TCP using three way-hand shake.	07
(b) What is congestion? Explain how congestion occurs in packet switched network.	07
Q.4 (a) Define the term “total internal reflection” in fiber optics. Use a diagram to show how data is transmitted through fiber optics.	07
(b) Justify the use of shortest path routing algorithm over flooding algorithm.	07
OR	
(a) Draw and explain architecture of the e-mail system.	07
(b) Explain microwave communication.	07
Q.5 (a) Explain resource record format for DNS.	07
(b) Draw and Explain 802.11 protocol stack.	07
OR	
(a) Compare OSI and TCP/IP reference model.	07
(b) Explain carrier sense multiple access protocol.	07
