

Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VII EXAMINATION – WINTER 2025

Subject Code:3170719

Date:01-12-2025

Subject Name:Distributed System

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) Explain, Why network system protocols are unsuitable for distributed systems?	03
(b) What is a Distributed System? State any three advantages and disadvantages of distributed systems with respect to centralized systems.	04
(c) Discuss the desirable features of a good message-passing system.	07
Q.2 (a) Define scalability, Fault Tolerance and Replication.	03
(b) What is flat naming and structured naming?	04
(c) Briefly explain different architectural styles of distributed system.	07
OR	
(c) Define virtualization. Explain architecture of virtual machine.	07
Q.3 (a) Explain working of Encoding and Decoding of Message Data.	03
(b) Explain the Mutual exclusion in centralized and distributed approach.	04
(c) What is Replication? Write about motivations for replication.	07
OR	
Q.3 (a) Define failure? List down various reasons for the occurrence of failure.	03
(b) Explain Election Algorithm for Synchronization in Distributed System.	04
(c) Define causal ordering. Explain how logical clocks are implemented in distributed systems.	07
Q.4 (a) Explain Firewall in detail.	03
(b) What is cryptography? What is the use of cryptography?	04
(c) What is atomic broadcast? Explain Group Communication Mechanism.	07
OR	
Q.4 (a) What is Denial of Service? Explain briefly.	03
(b) Difference between Authorization and Authentication.	04
(c) Write short note on data – centric consistency models.	07
Q.5 (a) What is multicasting? List the characteristics of multicasting.	03
(b) Briefly explain distributed commit and recovery in distributed systems.	04
(c) Write a short note on: Distributed object-based system.	07
OR	
Q.5 (a) List down requirements for distributed file system.	03
(b) Discuss persistent and non-persistent HTTP connection.	04
(c) What is RPC? Discuss the design issues for RPC.	07
