Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2021

Subject Code:3170719 Date:29/12/2021

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)**	What is a distributed system? How a distributed system does projects a single system image?	**03**
	(b)	Briefly discuss the issues related to distributed system design.	**04**
	(c)	What is main motivation of distributed system? Explain advantages and disadvantages of distributed systems.	**07**
Q.2	**(a)**	List out the various characteristics of distributed system.	**03**
	(b)	What is the need for code migration? Explain the code migration issues in detail?	**04**
	(c)	Discuss and compare various election algorithms.	**07**
		OR	
	(c)	List out the types of System Architectures in distributed system and explain it.	**07**
Q.3	**(a)**	Compare: Network Operating System and Distributed Operating System.	**03**
	(b)	What is distributed commit and recovery in distributed systems?	**04**
	(c)	Compare and contrast any 3 consistency models.	**07**
		OR	
Q.3	**(a)**	What is flat naming and structured naming?	**03**
	(b)	Enumerate various issues in clock synchronization.	**04**
	(c)	Why mutual exclusion is more complex in distributed systems? Categorize and compare mutual exclusion algorithms.	**07**
Q.4	**(a)**	Define IPC. What are the characteristics of IPC?	**03**
	(b)	List the differences between RMI and RPC.	**04**
	(c)	What is a logical clock? Explain how logical clocks are implemented in distributed system.	**07**
		OR	
Q.4	**(a)**	What is cryptography? What is the use of cryptography?	**03**
	(b)	What is Replication? Write about motivations for replication.	**04**
	(c)	What is RPC? Discuss the design issues for RPC.	**07**
Q.5	**(a)**	What is multicasting? List the characteristics of multicasting.	**03**
	(b)	What is CORBA's common Data Representation? Explain.	**04**
	(c)	Explain the common approaches to user authentication. What problems are associated with these approaches?	**07**
		OR	
Q.5	**(a)**	Difference between Authorization and Authentication.	**03**
	(b)	What is DFS? Also write the features of DFS.	**04**
	(c)	Explain the DNS name service and bind implementation of DNS.	**07**

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Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – SUMMER 2022

Subject Code:3170719 Date:10/06/2022

Subject Name:Distributed System

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. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Explain how simple client-server communication is done.	**03**
	(b)	Explain advantages and disadvantages of distributed systems.	**04**
	(c)	Explain distribution of transparency in distributed system.	**07**
Q.2	**(a)**	Briefly explain scalability in distributed system.	**03**
	(b)	Discuss flat and structured naming with example.	**04**
	(c)	Explain connection-oriented message communication with the help of diagram.	**07**
		OR	
	(c)	Define virtualization. Explain architecture of virtual machine.	**07**
Q.3	**(a)**	Discuss cryptography in brief.	**03**
	(b)	Give some examples of true identifiers.	**04**
	(c)	Explain two phase commit protocol.	**07**
		OR	
Q.3	**(a)**	List down requirements for distributed file system.	**03**
	(b)	Explain berkley clock synchronization algorithm.	**04**
	(c)	Explain iterative name resolution technique in detail.	**07**
Q.4	**(a)**	Explain the term availability and reliability.	**03**
	(b)	Write a short note on digital signature.	**04**
	(c)	Explain bully election algorithms. And compare it with ring election algorithm	**07**
		OR	
Q.4	**(a)**	Define failure? List down various reasons for the occurrence of failure.	**03**
	(b)	Discuss persistent and non-persistent HTTP connection.	**04**
	(c)	Explain vector clock timestamp using suitable example.	**07**
Q.5	**(a)**	Define happened before relation.	**03**
	(b)	Explain causal consistency.	**04**
	(c)	Describe kerberos authentication with neat diagram.	**07**
		OR	
Q.5	**(a)**	Define names, identifiers and addresses.	**03**
	(b)	Discuss different alternatives of client-server organization.	**04**
	(c)	Write a short note on: Distributed object-based system.	**07**

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