Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER –II-(Old) EXAMINATION – SUMMER 2019

Subject Code: 2720207 **Date: 09/05/2019**

Subject Name: Distributed Computing and Applications

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.**

Q.1	**(a)**	What is distributed computing? Explain its design issues and challenges.	**07**
	(b)	Explain the semantics used for ordered delivery of multicast messages in distributed systems.	**07**
Q.2	**(a)**	1. Discuss workstation-server model that can be used to build distributed system.	**03**
		2. Briefly explain datagram sockets and stream sockets.	**04**
	(b)	Explain typical RPC call message format and typical RPC reply message format .	**07**
		OR	
	(b)	Discuss any three call semantics of RPC.	**07**
Q.3	**(a)**	Discuss design issues of RMI.	**07**
	(b)	What is the significance of buffering strategy in message passing? Discuss different types of buffering strategies in detail.	**07**
		OR	
Q.3	**(a)**	Explain mechanism for transferring address space with its advantages and disadvantages.	**07**
	(b)	1. Describe blocking and nonblocking types of IPC.	**04**
		2. Discuss static versus dynamic remote method invocation.	**03**
Q.4	**(a)**	Define clock skew. How does clock synchronization issues differ in centralized and distributed computing system? Explain global averaging distributed algorithm.	**07**
	(b)	Discuss two-phase commit protocol in detail.	**07**
		OR	
Q.4	**(a)**	1. Explain happened-before relation.	**03**
		2. Discuss centralized approach of achieving mutual exclusion between processes in distributed system.	**04**
	(b)	Discuss the issues which must be addressed while memory-blocks are to be dynamically migrated/replicated in distributed shared memory.	**07**
Q.5	**(a)**	Explain issues in designing load balancing algorithm.	**07**
	(b)	Which are the various security threats and design issues in building secure distributed system.	**07**
		OR	
Q.5	**(a)**	Explain admission control and resource management in multimedia system.	**07**
	(b)	Briefly explain SOAP.	**07**

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