Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VIII.EXAMINATION – WINTER 2016

Subject Code: 180701 Date: 21/10/2016

Subject Name: Distributed Systems

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.**

Q.1	**(a)**	Define distributed system. What is main motivation of distributed system? Explain advantages and disadvantages of distributed systems.	**07**
	(b)	[1] Compare: Monolithic kernel and Microkernel [2] Compare: Network Operating System and Distributed Operating System	**07**
Q.2	**(a)**	Listout various distributed computing model. Explain workstation server model and processor pool model.	**07**
	(b)	Draw and explain ATM cell format.	**07**
		OR	
	(b)	Explain versatile message transport protocol.	**07**
Q.3	**(a)**	What is an IPC? Explain IPC message format. Also listout issues to be consider for the design of IPC protocol based message passing system.	**07**
	(b)	Explain construction a DFS spanning tree for a specified root.	**07**
		OR	
Q.3	**(a)**	Explain algorithm for constructing DFS spanning tree without a specified root.	**07**
	(b)	Draw and explain general RMI architecture. Also write advantages of RMI.	**07**
Q.4	**(a)**	What is deadlock? List out four necessary and sufficient conditions for a deadlock occur. Explain various deadlock preventions strategies.	**07**
	(b)	How problem is specified using formal model? Explain asynchronous point to point message passing and asynchronous broadcast.	**07**
		OR	
Q.4	**(a)**	What is physical clock? What is logical clock? Explain how to implement logical clock in distributed system?	**07**
	(b)	How object locating is carried out in distributed system? Discuss different object locating mechanisms.	**07**
Q.5	**(a)**	Explain name space and name server.	**07**
	(b)	Which are the different types of process scheduling techniques? Explain desirable features for good scheduling algorithm.	**07**
		OR	
Q.5	**(a)**	What is thread? Compare user level thread with kernel level thread.	**07**
	(b)	What is coherence protocol? Explain how the MRMW protocol is implemented.	**07**

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