Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – SUMMER • 2014

Subject code: 715102 Date: 17-06-2014

Subject Name: Advanced Operating System and Management

Time: 02:30 pm - 05:00 pm Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full mark.**

Q.1	**(a)**	Define local resources and remote resources. Draw the architecture of distributed operating systems	**07**
	(b)	How to represent casually related events and concurrent events in lamportôs logical clocks. Write the implementation rules(IR) of lamportôs logical clock.	**07**
Q.2	**(a)**	Define strongly consistent global state. Write the requirements of distributed mutual exclusion.	**07**
	(b)	Analyze the performance lamportôs algorithm for distributed mutual exclusion.	**07**
		OR	
	(b)	Analyze the performance Ricart-Agrawala algorithm for distributed mutual exclusion.	**07**
Q.3	**(a)**	Write on resource deadlocks and communication deadlocks. Explain why deadlock prevention cannot be used in distributed operating systems.	**07**
	(b)	Explain Distributed Deadlock Control. Write Ho-Rammoorthys 2-Phase Centralized algorithm for Distributed Deadlock.	**07**
		OR	
Q.3	**(a)**	Explain the working of Diffusion Computation Distributed algorithm for Deadlock	**07**
	(b)	Write on Deadlock Resolution	**07**
Q.4	**(a)**	Explain Byzantine Agreement Problem. Explain 2 applications of Agreement Protocol.	**07**
	(b)	Write on Mechanisms for building Distributed File System. Write on NFS.	**07**
		OR	
Q.4	**(a)**	Write the advantages of Distributed Shared Memory. Write on Granularity for Distributed Shared Memory.	**07**
	(b)	Explain the 3 components of Access Matrix Model. Why Microsoft Windows gives an opinion that it is not secure.	**07**
Q.5	**(a)**	Define System Configuration. What are the reasons for using NAT.	**07**
	(b)	Write on issues of Systems Management	**07**
		OR	
Q.5	**(a)**	Explain the Design issues of Distributed Operating System	**07**
	(b)	Write Chandy-Lamports algorithm for collection of Global State	**07**

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