GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–VII (NEW) EXAMINATION – WINTER 2020

Subject Code:2173208   Date:30/01/2021
Subject Name:Distributed Computing
Time:10:30 AM TO 12:30 PM   Total Marks: 56

Instructions:
1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1	(a)	Compare the pros and cons of microkernel and monolithic kernel approach.	03
	(b)	Network system protocols are unsuitable for distributed	04
	(c)	Explain issues related to designing of distributed operating system.	07
Q.2	(a)	Can two computers on the internet have the same IP address? Justify	03
	(b)	What is process addressing? Explain commonly used methods for process addressing.	04
	(c)	What is non-idempotent routine? How such routine creates problem with message passing? Also explain its solution with example.	07
Q.3	(a)	What is acknowledgement message? Why is it always needed for reliable communication?	03
	(b)	Explain orphan call. How are orphan calls handled in the implementation of various call semantics?	04
	(c)	Explain FLIP protocol.	07
Q.4	(a)	What is the major difference between physical and logical clocks?	03
	(b)	Explain 'happened–before' relationship.	04
	(c)	What is the main difference between stateless and stateful servers? Which servers are used in distributed applications?	07
Q.5	(a)	List out issues in designing a thread package.	03
	(b)	Discuss the four necessary and sufficient conditions for a deadlock to occur. Give suitable examples to show that a deadlock cannot occur if any one of the four conditions is absent.	04
	(c)	Explain Client server Binding Mechanism.	07
Q.6	(a)	Compare active replication and primary backup methods.	03
	(b)	Explain the address space transfer mechanism for process migration in brief	04
	(c)	Explain Global averaging distributed algorithm for clock synchronization.	07

Q.7	(a)	Explain desirable features of good naming system in brief.	03
	(b)	Discuss the task assignment approach.	04
	(c)	Explain the following deadlock prevention techniques: (1) Collective requests (2) Ordered requests	07
Q.8	(a)	Can false sharing be completely eliminated?	03
	(b)	Write Short note on : DNS	04
	(c)	Explain the DSM system architecture. How does granularity affect DSM system performance?	07

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