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Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam – 603 110

(An Autonomous Institution, Affiliated to Anna University, Chennai)

Department of Computer Science and Engineering

Continuous Assessment Test – III

Question Paper

Degree & Branch	BE & Computer Science and Engineering				Semester	VII
Subject Code & Name	UCS1701- Distributed Systems				Regulation:	2018
Academic Year	2022-2023 ODD	Batch	2019-2023	Date	12-11-2022	FN / AN
Time: 08:15 – 09:45 AM (90 Minutes)	Answer All Questions				Maximum: 50 Marks	

Part – A (6×2 = 12 Marks)

KL2	1. Outline the impact of lost messages on consistency and performance issues.	CO4
KL1	2. Define Orphaned messages.	CO4
KL1	3. Define Overlay Network.	CO5
KL2	4. Outline the disadvantages of using Global State Recording Protocol for Checkpointing.	CO4
KL1	5. What is log-based checkpointing?	CO4
KL2	6. Compare stable log with volatile log.	CO4

Part – B (3×6 = 18 Marks)

KL2	7. Explain Peer to Peer systems. Outline the difference between the P2P and client server model.	CO5
KL2	8. Discuss the routing mechanism followed in Tapestry P2P system.	CO5
KL3	9. Consider 4 processes A, B, C & D, develop a scenario which demonstrate Domino's effect.	CO4

Part – C (2×10 = 20 Marks)

KL3	10. Consider a suitable topology with 4 processes A, B, C & D and assume process A initiates the task. Apply optimized coordinated checkpointing algorithm for the above given scenario and demonstrate the actions through necessary diagrams. Include messages wherever necessary.	CO4
(OR)		
KL3	11. Consider a suitable topology with 4 processes A, B, C & D and assume process A crashes. Apply synchronous recovery algorithm for the above given scenario and demonstrate the actions through necessary diagrams. Include messages wherever necessary.	CO4
KL3	12. Consider a suitable topology with 4 processes A, B, C & D and assume process A crashes. Apply asynchronous recovery algorithm for the above given scenario and demonstrate the actions through necessary diagrams. Include messages wherever necessary.	CO4
(OR)		

KL3	13. Consider two processes <i>A</i> & <i>B</i> which are programmed to send messages to each other parallelly. Process <i>A</i> sends a message to <i>B</i> and crashes. Process <i>B</i> message gets delayed and delivered. Identify the issue that affects the consistency and simulate the simulate the sequence of actions for the given scenario.	CO4
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