CBCS SCHEME
SRI SAIRAM COLLEGE OF ENGINEERING

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BCS515D

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Distributed Systems

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	List and explain any four characteristics of distributed systems.	10	L1	CO1
	b.	Describe the different domains of distributed systems.	10	L1	CO1
		OR			
Q.2	a.	"Transparency is the most important feature of distributed system." Justify the statement with example.	10	L2	CO1
	b.	What are the trends in Distributed Systems? Explain with example.	10	L2	CO1
		Module – 2			
Q.3	a.	Briefly discuss the file service architecture and its three components.	10	L2	CO3
	b.	Explain the requirements of distributed file system.	10	L2	CO3
		OR			
Q.4	a.	Define the term navigation. Briefly describe the iterative and multicast navigation model.	10	L2	CO3
	b.	Define DNS and explain DNS with neat diagram.	10	L2	CO3
		Module – 3			
Q.5	a.	Define the terms clock skew and clock drift. Discuss the reasons that can lead to clock drift.	10	L1	CO4
	b.	Discuss the importance of Global State of Distributed System.	10	L2	CO4
		OR			
Q.6	a.	Discuss the three modes in which the NTP servers synchronize with one another.	10	L2	CO4
	b.	What are logical clocks? List the types of logical clocks and explain its chrematistics.	10	L1	CO4
		Module – 4			
Q.7	a.	What is a failure detector? Briefly discuss the two types of failure detectors.	10	L2	CO5
	b.	What are the essential requirements for mutual exclusion? Discuss the criteria according to which the performance of various algorithms for mutual exclusion can be evaluated.	10	L2	CO5
		OR			
Q.8	a.	In which situation, the following election algorithms are suitable: (i) Bully (ii) Ring	10	L3	CO5
	b.	How is the multicast operation useful? List the properties that need to be satisfied by a reliable multicast.	10	L1	CO5
		Module – 5			
Q.9	a.	Explain transaction recovery techniques with example.	10	L2	CO6
	b.	What are the two phases of the two-phase commit protocol? Discuss the best case and worst case performance of the protocol.	10	L1	CO6
		OR			
Q.10	a.	Give a brief comparison of the hierarchic and flat phase commit protocol.	10	L2	CO6
	b.	What are the basic requirements for data replication? Explain with example.	10	L2	CO6

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