K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

	May-June 2025
	(B. Tech) Program: Computer Engineering Scheme :II
	Regular Examination: LY Semester:VIII
	Course Code: CEC801 and Course Name: Distributed Computing
Date of Exam: 19/5/25	Duration: 02.5 Hours Max. Marks: 60

Instructions:
(1)All questions are compulsory.
(2)Draw neat diagrams wherever applicable.
(3)Assume suitable data, if necessary.

Q. No.	Question	Max. Marks	CO	BT level
Q 1	Solve any **two** questions out of three: (05 marks each)	10		
a)	Explain Distributed Information System with an example.		CO1	U
b)	Differentiate between Message oriented communication and Stream oriented communication.		CO2	U
c)	Explain Bully Election algorithm with an example.		CO3	U
Q 2	Solve any **two** questions out of three: (05 marks each)	10		
a)	Describe five design issues for load balancing with an example.		CO4	U
b)	Draw and explain distributed shared memory architecture in detail.		CO5	U
c)	Explain the importance of scalability and fault tolerance in a name service.		CO6	U
Q.3	Solve any **two** questions out of three. (10 marks each)	20		
a)	Illustrate Raymond's Tree algorithm, and explain how it optimizes the process of mutual exclusion in a tree-based distributed system?		CO3	AP
b)	Apply RPC mechanism and write all the steps for an abstract two-parameter procedure doit (a,b), where we assume that parameter a is of type type1, and b of type type2.		CO2	AP
c)	How does the Ricart-Agrawala algorithm improve upon Lamport's algorithm in terms of message complexity and synchronization?		CO3	AP
Q.4	Solve any **two** questions out of three. (10 marks each)	20		

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a)	Apply the concept of code migration to explain the role of Process to resource and Resource to Machine binding.		CO4	AP
b)	Illustrate Data Centric Consistency model with an example.		CO5	AP
c)	Explain the characteristics of Google File System (GFS) and HDFS (Hadoop Distributed File System) with an example?		CO6	U

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