

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

May-June 2026	
Program: B. Tech. Scheme: IIB	
Regular Examination: LY Semester: VIII	
Course Code: CEC801 and Course Name: Distributed Computing	
Date of Exam: 19/05/2026	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)	Compare and contrast RPC and RMI.	5	CO2	U
b)	Define Clock synchronization (1M). Why is Vector Clock better than Lamport Clock? (2M) Explain with an example (2M).	5	CO3	U
c)	Explain how client-centric consistency improves mobile application performance.	5	CO5	Ap
Q 2	Solve any two questions out of three: (05 marks each)	10		
a)	Given processes with IDs (P0–P7), show step-by-step election using Bully algorithm when the coordinator fails.	5	CO3	Ap
b)	Describe five design issues for load balancing algorithms.	5	CO4	U
c)	Explain how DNS resolves domain names in a cloud-based application.	5	CO6	Ap
Q.3	Solve any two questions out of three. (10 marks each)	20		
a)	Apply the goals of distributed systems to online banking and explain how each goal is achieved.	10	CO1	Ap
b)	Explain Ricart–Agrawala algorithm in detail. How does the Ricart–Agrawala algorithm improve upon Lamport’s algorithm in terms of message complexity and synchronization?	10	CO3	Ap
c)	Describe process management in distributed systems in detail with suitable examples.	10	CO4	U
Q.4	Solve any two questions out of three. (10 marks each)	20		
a)	Analyze how stream-oriented communication is used in video conferencing applications.	10	CO2	Ap

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b)	Discuss the design challenges associated with building fault-tolerant distributed systems using example.	10	CO5	U
c)	Explain DFS architecture and its components.	10	CO6	U
