SARDAR PATEL INSTITUTE OF TECHNOLOGY

(Autonomous Institute Affiliated to University of Mumbai)

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India

DEPARTMENT OF COMPUTER ENGINEERING

END SEMESTER EXAMINATION

Autumn 2022-23 M.Tech. Sem-II

CS507: Distributed Computing Systems

Max. Marks: 100 Time: 3 hours

Instructions

- Carefully read the question and the weight age given, and accordingly strategies your answers. *(Don't write things which are not asked)*
- Make suitable assumptions, if required. Mention those categorically.
- All Questions are Compulsory.
- New Question (not a sub-question) be solved from a new page.
- You may choose any sequence of questions while writing the answers, however, all sub questions must be written in a sequence.
- The last two columns are related with Outcome Based Education. (You don't bother)

Q. No		Questions	MM	BL	CO
Q1	A	What are the two different ways of sending data when the send primitive is invoked? Define the following blocking/non-blocking and synchronous/asynchronous primitives: a. Synchronous primitives b. Asynchronous primitives C. Blocking primitives d. Non-blocking primitives	10 120-122	B2	C1
	B	What is a distributed program? What are the different models of process communication? Explain each one in details.	10	B2	C1
Q2	A	What is Group communication? Give any two key application area of group communication in distributed systems. OR What are the two criteria must be met by a causal ordering Protocol? Explain with proper justification	10	B3	C2
	B	Write a bully Election algorithms and explain it with the help example.	10	B3	C2
Q3	A	Explain the Lamport's distributed mutual exclusion algorithm in terms of a. Requesting the critical section b. Executing the critical section and C. Releasing the critical section	10	B3	C3
	B	What are the different model of deadlocks? Explain any three models.	10	B3	C4
Q4	A	What are the types of data indexing in P2P networking? Explain with example	10	B3	C4

	B	What are the different challenges in P2P system design? Explain with example. OR State and explain the properties of the Internet.	10	B2	C4
Q5	A	What are block chain? How does Block chain works? What are its benefits and limitations?	10	B2	C5
	B	What is distributed shared memory? Give the solutions on the shared-memory model.	10 pg 30-36	B2	C5
Good Luck !!					