Registration No.: | | | | | | | | | | |

Total Number of Pages: 02 **Course: B.Tech**
Sub_Code: CSPE3004

5th Semester Regular Examination: 2025-26
SUBJECT: Distributed Systems
BRANCH(S): CSE
Time: 3 Hours
Max Marks: 100
Q.Code: U201

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.
The figures in the right-hand margin indicate marks.

Part-I

Q1 **Answer the following questions:** **(2 x 10)**

a) Define global state with example.
b) What is edge chasing in deadlock?
c) What is the difference between symmetric and asymmetric algorithms?
d) Explain SOAP.
e) Define Fork and Join
f) What is passive replication?
g) What is two-phase commit algorithm?
h) What are stub and skeleton?
i) What is marshalling?
j) What is stream communication?

Part-II

Q2 **Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** **(6 × 8)**

a) Differentiate logical clock and vector clock
b) What is phantom deadlock? Briefly explain about phantom deadlock.
c) What is time stamp ordering in concurrency control?
d) Briefly explain: Encapsulation, Protection, Concurrent processing.
e) What are the components of CORBA?
f) What are the uses of UDP datagram?
g) Explain java object serialization.
h) What is clock skew and clock drift?
i) Explain linearizability and sequential consistency.
j) Briefly explain locking rules for nested transaction.
k) What is kernel? Briefly explain the uses of kernel.
l) What are the design issues of RPC?

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

Q3	**a)**	Write down the different issues and components of load distributor's algorithm.	**(8 x 2)**
	b)	Briefly explain threads. What are different types of threads? Write the advantages and disadvantages of threads	
Q4	**a)**	Write down the difference between java RMI and RPC.	**(8)**
	b)	Briefly explain about physical models of distributed system.	**(8)**
Q5	**a)**	Mention various requirement of distributed file system.	**(8)**
	b)	Explain the difference between Centralized and Distributed Deadlock detection algorithms.	**(8)**
Q6		Write short notes on any two	**(8 x 2)**
	a)	CORBA's CDR	
	b)	Sun NFS	
	c)	Distributed mutual exclusion	
	d)	Network OS and Distributed OS.	