Computer Science & Engineering Department

Distributed System (CS 1701)
B.Tech CS VII Sem,
Mid Semester Examination Sep'2019

Max. Marks: 20 **Time: 90 Min.**

NOTE—*Attempt all questions / Answers must be supported by diagrams wherever necessary / Answers should be VERY PRECISE*

Q1. Consider a scenario consisting of two Sites (systems) S1 and S2. S2 consists of P3 & R3. Rest of the processes and resources reside at S1. The request and allocation of the resources by various processes are R1->P1, R2->P2, R3->P3, P2->R1, P3->R2, P1 releases R1 & R1->P2, P1->R3. If we apply Centralizes Approach for Deadlock Detection, is the distributed system deadlocked? What happens when the message P1 releases R1 is delayed? **[5]**

Q2. Consider a broadcasting method of data locating in RMB. What shall be the status of owner table of node 2 and node 3, when node 2 generates a write fault for block 6000 for following scenario: **[5]**

- When the requested block is replicated
- When the requested block is migrated

The present owner table is as follows:

Node 1	
Block Address	Copyset
1000	1
2000	1

Node 3	
Block Address	Copyset
5000	3
6000	3

Node 5	
Block Address	Copyset
9000	5
10000	5

Node 2	
Block Address	Copyset
3000	2
4000	2

Node 4	
Block Address	Copyset
7000	4
8000	4

Q3. Suggest whether may-be, last-one, last-of-many, at-least-once, or exactly-once call semantics should be used for each of the following scenarios / applications along with valid reasons for your answer: **[5]**

a) For making a request to a time server to get the current time.
b) For making a request to a node's resource manager to get the current status of resource availability of its node.

PTO