PAPER ID-410811

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Subject Code: RCS701

Roll No: | | | | | | | | | | | | | |

B TECH
(SEM-VII) THEORY EXAMINATION 2021-22
DISTRIBUTED SYSTEM

Time: 3 Hours *Total Marks: 70*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 7 = 14**

a. Define distributed deadlock?
b. Discuss important features of mounting?
c. Define global State.
d. What are the problems involving in the distributed-commit?
e. What is a denial-of-service attack and how does it work?
f. Why clocks need to be synchronized?
g. Explain active replication.

SECTION B

2. Attempt any *three* of the following: **7 x 3 = 21**

a. What are the differences in centralized, distributed and hierarchical control organization for distributed deadlock detection?
b. What do you mean by termination detection? Explain Hwang's termination detection algorithm.
c. Explain the concepts of relocation, migration and failure transparency.
d. What do you mean by agreement protocol? List all the agreement protocols and the difference between them.
e. Name all modules of file system operations and write in detail about distributed file system requirements.

SECTION C

3. Attempt any *one* part of the following: **7 x 1 = 7**

a. What is the significance of marker in Chandy-Lamport algorithm? Explain.
b. What are the fault tolerance services available now days? Explain Dynamic voting protocol in detail.

4. Attempt any *one* part of the following: **7 x 1 = 7**

a. Discuss how the efficiency of distributed shared memory system depends on the size of granularity and protocol used for page replacement.
b. What are the different validation conditions for optimistic concurrency control? How it effects the transaction in distributed system?

5. Attempt any *one* part of the following: **7 x 1 = 7**

a. What is Lamport logical clock? List the important conditions to be satisfied by Lamport logical clocks. Discuss the limitations of Lamport logical clock.
b. Define Forward and Backward error recovery. Also list the advantages and disadvantages of both.

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6. Attempt any *one* part of the following: 7 x 1 = 7

a. Illustrate an example execution of the ring- based algorithm to show that processes are not necessarily granted entry to the critical section in happened-before order.

b. Discuss the followings terms:

i. Highly available services.

ii. Sequential Consistency.

7. Attempt any *one* part of the following: 7 x 1 = 7

a. Describe checkpointing? Explain consistent set of checkpoints.

b. What are Locks? What are the essential differences in the lock based protocol and time-stamp based protocols?