PAPER ID-410297

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

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

Time: 3 Hours ***Total Marks: 100***

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

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

a. Define bully algorithm.
b. Differentiate between 2PL and strict 2PL.
c. Explain token based algorithm.
d.What is the election algorithm?
e.What is meant by nested transactions?
f. Define Edge chasing.
g.What is deadlock resolution?
h. Describe orphan messages and loss messages.
i. Explain event ordering.
j.What do you mean by global sate of Distributed System?

SECTION B

2. Attempt any *three* of the following: **10 x 3 = 30**

a. What are phantom deadlock? Explain the algorithm which could detect phantom deadlock.
b. Describe the advantages and disadvantages of the HTML, URL and HTTP as core technologies for information browsing.
c. Write compare and contrast between different concurrency control techniques for transaction.
d. Discuss any checkpoint and recovery algorithm that takes a consistent checkpoint and avoids livelock problems.
e. Differentiate between forward and backward recovery. Explain Orphan Message and Domino effect with example.

SECTION C

3. Attempt any *one* part of the following: **10 x 1 = 10**

a. Which protocol do you suggest when there is a network partition? Explain it's variant as well.
b. Explain how a non recoverable situation could arise if write locks are released after the last operation of a transaction but before its commitment.

4. Attempt any *one* part of the following: **10 x 1 = 10**

a. Explain Chandy- Lamport algorithm for consistent state recording.
b. What are Distributed Systems? What are the significant advantages and applications Distributed Systems?

5. Attempt any *one* part of the following: **10 x 1 = 10**

a. What is Timestamp ordering? Explain advantages and disadvantages of multi-version time stamp ordering.
b. Discuss the followings terms:
i. Highly available services. ii. Sequential Consistency.

6. Attempt any *one* part of the following: **10 x 1 = 10**

a. What do you mean by agreement protocol? List all the agreement protocols and the difference between them.
b. What are the fault tolerance services available now days? Explain in detail.

7. Attempt any *one* part of the following: **10 x 1 = 10**

a. How distributed mutual exclusion is different of mutual exclusion in single computer system? Explain Ricart-Agrawala Algorithm.
b. Explain path pushing algorithm for distributed deadlock detection algorithm.

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