



PAPER ID-410297

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Subject Code: KCS077

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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 state 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 its 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 of 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.