

B.TECH
(SEM VII) THEORY EXAMINATION 2018-19
DISTRIBUTED SYSTEMS

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. What are the web Challenges involved in distributed system.
 - b. Explain system model.
 - c. What is distributed Deadlock?
 - d. What do you mean by commit protocol
 - e. State time stamp ordering.
 - f. Explain the concept of shared memory
 - g. Define fault and failure in distributed system
 - h. Explain token based algorithm
 - i. What do you mean by agreement protocol?
 - j. Explain the effect of replicated data in transactions.

SECTION B

2. Attempt any three of the following: 10 x 3 = 30
- a. State the Classification of distributed mutual exclusion. What is requirement of mutual exclusion theorem?
 - b. What do you understand by Byzantine agreement problem?
 - c. Give the Design issues in Distributed Shared Memory state the Algorithm for Implementation of Distributed Shared Memory.
 - d. Explain the limitations of Distributed system with example.
 - e. Define forward and backward recovery. Also list the advantages and disadvantages of both.

SECTION C

3. Attempt any one part of the following: 10 x 1 = 10
- (a) What is token based algorithm and non-token based algorithm in Distributed system? Explain with example.
 - (b) What are Distributed Systems? What are significant advantages and applications of Distributed Systems?
4. Attempt any one part of the following: 10 x 1 = 10
- (a) What are Lamport logical clocks? List the important conditions to be satisfied by Lamport logical clocks. Discuss the limitations of Lamport logical clocks.
 - (b) Explain the mechanism of building distributed file systems also explain the Design issues in Distributed Shared Memory.

5. 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? How the performance of mutual exclusion algorithm is measured?
 - (b) Discuss the following in terms of distributed system
 - (i) sequential consistency
 - (ii) highly available services

6. Attempt any one part of the following: 10 x 1 = 10
- (a) Explain typical architecture of distributed file system. State the Algorithm for Implementation of Distributed Shared Memory.
 - (b) What is Byzantine agreement problem? Provide the Solution to Byzantine Agreement problem.

7. Attempt any one part of the following: 10 x 1 = 10
- (a) What are the different validation conditions for optimistic concurrency control? How it effects the transactions in distributed system.
 - (b) Explain distributed transactions. Discuss the functionality of Flat and nested distributed transactions with example.

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