Code No: R1932052 **R19** **SET - 1**

III B. Tech II Semester Supplementary Examinations, November-2022

DISTRIBUTED SYSTEMS

(Computer Science and Engineering)

Time: 3 hours Max. Marks: 75

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks
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UNIT-I

1. a) Compare and contrast shared memory and message passing systems. [8M]
   b) Describe the Physical clock synchronization: NTP briefly. [7M]

(OR)

2. a) Demonstrate the design issues and challenges of distributed systems. [8M]
   b) Explain the framework for a system of logical clocks. [7M]

UNIT-II

3. a) Explain the following message ordering paradigms: [8M]
      (i) Asynchronous executions
      (ii) Causally ordered (CO) executions
   b) Explain Hierarchy of ordering paradigms of SYNC (or RSC), CO, FIFO. [7M]

(OR)

4. a) Describe the synchronous program order on an asynchronous system. [8M]
   b) Explain the Rendezvous group communication. [7M]

UNIT-III

5. a) Distributed mutual exclusion and requirements of mutual exclusion algorithms. [8M]
   b) Explain system model for Wait-for graph. [7M]

(OR)

6. a) Explain Issues in deadlock detection. [8M]
   b) Discuss the Maekawa's algorithm for mutual exclusion. [7M]

UNIT-IV

7. a) Explain the Causal logging protocol for log based recovery. [8M]
   b) Discuss the procedure of the Byzantine agreement problem. [7M]

(OR)

8. a) Demonstrate the procedure of the rollback recovery algorithm. [8M]
   b) Explain Byzantine agreement problem. [7M]

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UNIT-V

9. a) Describe the content addressable networks (CAN) in the following ways: (i) CAN initialization (ii) CAN routing [8M]

   b) Discuss the use of Overlay graphs. [7M

(OR)

10. a) Elaborate the Chord distributed hash table of Scalable lookup. [8M]
    b) Explain the Peer-to-Peer Computing. [7M]

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