

Roll No. ....

Total Pages : 3

**BT-8/M-20**

**38026**

**DISTRIBUTED COMPUTING**

Paper–IT-470

Time Allowed : 3 Hours]

[Maximum Marks : 75

**Note** : Attempt **five** questions in all, selecting at least **one** question from each Unit. All question carry equal marks.

**UNIT-I**

1. (a) Explain the system architectures and different variations for modeling distributed systems. 6  
(b) Discuss the issues involved in workload allocation, consistency and maintenance in distributed systems. 9
2. (a) Explain IPC mechanisms available in UNIX. 6  
(b) What is the request-reply protocol for Client server communication? How to handle duplicate request messages and lost reply messages ? 9

**UNIT-II**

3. (a) What are name services and name spaces ? What are general name service requirements ? 8

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- (b) What are the mechanisms for timing and coordination ? 7
- 4. (a) What do you mean by distributed Mutual exclusion ? Describe the working of a server deployed for managing a mutual exclusion token for a set of processes. 8
- (b) Explain methods of Replication and Performance issues. 7

### UNIT-III

- 5. (a) What are Atomic commit protocols ? Explain different operations required for implementing two-phase commit protocol. 9
- (b) What are Byzantine faults ? Discuss some general solutions for such faults. 6
- 6. (a) Describe the issues involved in Concurrency control. 7
- (b) How to handle transactions with replicated data ? Discuss. 8

### UNIT-IV

- 7. (a) Describe a protocol for Asynchronous recovery in distributed system. 9

- (b) Explain hierarchical and group masking of Faults. 6
- 8. (a) Describe fault model for transactions and mechanism for recovery. 9
- (b) Discuss the following terms : 6  
Checkpointing, Logging and Key distribution.