

8E4017

Roll No. : \_\_\_\_\_

Total Printed Pages : **3****8E4017**

**B. Tech. (Sem. VIII) (Back) Examination, April/May-2011**  
**Computer Science**  
**8CS4.1 Distributed Systems**

Time : **3 Hours**][Total Marks : **80**[Min. Passing Marks : **24**

*Attempt any five questions, selecting one question from each unit. All questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly, Units of quantities used/calculated must be stated clearly.*

Use of following supporting material is permitted during examination.  
 (Mentioned in form No. 205)

1. \_\_\_\_\_ Nil \_\_\_\_\_

2. \_\_\_\_\_ Nil \_\_\_\_\_

**UNIT - I**

1 (a) Explain Distributed System model with suitable examples.

8

(b) Explain the limitations of Distributed System. Define fundamental models briefly.

8

**OR**

1 (a) Define Clock Synchronization in distributed system. What are Logical and Physical Clocks ?

8

(b) What is Mutual Exclusion ? Differentiate between token based algorithm and non-token based algorithm in mutual exclusion.

2+6

8E4017]



1

[Contd...

## UNIT - II

- 2 (a) Describe mechanism for deadlock detection in distributed system.

4

- (b) Write short notes on :  
(i) Centralized deadlock detection.  
(ii) Distributed deadlock detection.

6+6

OR

- 2 (a) Explain Edge Chasing Algorithm. Define the role of Atomic commit in Distributed Database System.

8

- (b) Define Byzantine agreement problem with its solution. What do you mean by agreement protocol ?

8

## UNIT - III

- 3 (a) What is Middleware Layer ? Define distributed object model with suitable example.

2+6

- (b) Define the role of client and server stub procedures in RPC. Explain architecture of distributed event notification.

4+4

OR

- 3 (a) Describe the role of Digital Signature in Security. Define Digital Signature with Public and Secret Key.

8

- (b) Write the characteristics of File System. Explain Andrew file system with diagram.

8

## UNIT - IV

- 4 (a) What is Locks in Transactions ? Define deadlock in locks with suitable example.

3+5

- (b) What is Concurrency Control ? Write comparison of methods for Concurrency Control.

8

OR

8E4017]



2

[Contd...

4 (a) Explain communication in two-phase commit protocols. Define transaction recovery in distributed transaction. 8

(b) What is Replication ? Explain fault tolerant service in replication with example. 8

### UNIT - V

5 Write short notes on :

(a) Routing Algorithms

(b) Balanced Sliding Window Protocol

8+8

### OR

5 (a) What is APP Problem ? Explain Election Algorithm for distributed system. 8

(b) Explain architecture of CORBA with diagram. Define Definition Language (IDL) module for CORBA. 8