3E7932

M.Tech. (Sem. III) (Main/Back) Examination, April - 2009
Computer Science & Engineering
Distributed Algorithms

Time : 3 Hours]

[Total Marks : 100
[Min. Passing Marks : 33

Attempt any five questions.
Marks of questions are indicated against each question.

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

1. _____ Nil _____   2. _____ Nil _____

1. (a) How do the distributed algorithm differ from central algorithms ? Discuss the algorithmic problems related to the model of concurrent process.   10

   (b) Why do we need H.S. algorithm in the Synchronous Network Model ? Discuss its complexity.

       10

2. (a) How will the leader election problem be handled by the General network model? Explain an algorithm for it.   10

   (b) Explain the Floyd Warrshall algorithm for all pair shortest path problem.   10

3. (a) What is Byzantine failure? Explain the EIG alogrithm for Byzantine agreement problem.   10

   (b) What is non blocking commit concept? Explain the algorithm which satisfies strong termination condition.   10

4. (a) What is mutual exclusion problem? Explain Bakery algorithm with its complexity analysis.
       10

   (b) What is Queue M.E. algorithm and explain its complexity analysis.   10

5. (a) Explain the simple algorithm for transformation from Network model to Shared memory model.   10

   (b) Discuss the analysis and complexity of Synch. BFS algorithm.
       10

6. (a) What is coordinated attack problem? Explain an algorithm for randomised version.   10
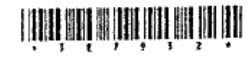
   (b) What is failure detector ? Explain perfect FD agreement algorithm in brief.   10

7. Carefully discuss the analysis and complexity of :
   (a) Luby MIS algorithms.   10

   (b) Flood Min algorithm.   10