2E9103

Roll No. : .

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M. Tech. (Sem. II) (Main / Back) Examination, October - 2011
Computer
2MCS3 Distributed Algorithms

Time : 3 Hours] [Total Marks : 100
[Min. Passing Marks : 33

*Attempt any **five** questions.*
Marks of questions are indicated against each question.
Draw neat and comprehensive sketches wherever necessary to clearly illustrate your answer.
Assume missing data suitably if any and specify the same.

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

1. Nil 2. Nil

1 (a) What are the issues related to co-operating processes in designing distributed algorithms ? Discuss each one.
(b) What are the differences between centralized and distributed algorithms ? Explain.

2 (a) Does LCR solve the leader election problem ? Justify your answer.
(b) Is variable speed algorithm better than time-slice algorithm? Justify your answer.

3 (a) Why Synch GHS algorithm is popular ? Analyse its communication complxity.
(b) What is the value of disagreement, if Random-Attack algorithm solves the coordinated attack problem ? Justify your answer.

4 (a) What is the Agreement problem ? Analyse the message complexity of optflood set algorithm.
(b) Analyze the communication complexity of EIG stop algorithm.

5 (a) Is there any difference between 2 phase commit and 3 phase commit problem ? Explain an algorithm for blocking commit problem.
(b) Does Tournament algorithm solve mutual exclusion problem? Is it lock out free ? Explain.

6 (a) Analyze Burns ME algorithm and justify its progress.
(b) Ticket ME algorithm guarantees bounded bypass, using n^2 values of shared memory. Justify this statement.

7 (a) What is the need of wait-free termination ? Explain RMW Agreement algorithm also.
(b) The transformation from asynchronous network model to the shared memory model tolerates the stopping failures. Justify this statement.

8 (a) Analyse simple SR sim algorithm for arbitrary failures.
(b) What is the need of failure detector ? Explain an algorithm to solve agreement problem.