Printed Pages—2 ECS701

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID :110701 Roll No. | | | | | | | | | | |

B.Tech.

(SEM. VIII) THEORY EXAMINATION 2013-14

DISTRIBUTED SYSTEMS

Time : 3 Hours *Total Marks : 100*

Note :– Attempt **all** questions.

1. Attempt any **four** parts of the following : **(4×5=20)**
   (a) What do you mean by Distributed System ? Explain the inherent limitations of distributed system.
   (b) What do you mean by causal ordering of messages ? Write a suitable algorithm for causal ordering of messages.
   (c) What is Lamport's Logical clock ? Explain the limitations of Lamport's logical clock.
   (d) Explain Vector clocks ? Explain implementation rules used for implementing vector clocks.
   (e) What is Global State ? Explain Different types of Global States ?
   (f) Explain advantages and disadvantages of Distributed System.
2. Attempt any **four** parts of the following : **(4×5=20)**
   (a) Differentiate between Token and Non Token based Algorithms with example.
   (b) What do you mean by Mutual Exclusion in Distributed System ? Explain performance measures used for evaluating Mutual Exclusion Algorithm.

(c) Differentiate between Resource and Communication Deadlock. Explain Path Pushing algorithm in brief.

(d) Differentiate between Centralized Distributed Deadlock Detection Strategies.

(e) Explain Resource and Communication Deadlock. Explain Path Pushing algorithm in brief.

(f) Explain Edge Chasing Algorithm Deadlock Detection Algorithm in detail.

3. Attempt any **two** parts of the following : **(2×10=20)**

(a) What are Agreement Protocols ? Differentiate between Byzantine Agreement Problem, Consensus Problem, and Interactive Consistency Problem.

(b) What do you mean by Distributed File System ? Explain 3 mechanisms used for implementing Distributed File System.

(c) What do you mean by Distributed Shared memory ? Explain 2 algorithms used for implementing Distributed Shared Memory.

4. Attempt any **two** parts of the following : **(2×10=20)**

(a) What is Checkpoint ? Explain one Checkpoint algorithm in detail.

(b) Differentiate between Forward and Backward Recovery Technique. Explain Orphan Message and Domino Effect wth example.

(c) Explain Dynamic Voting Protocol in detail.

5. Attempt any **two** parts of the following : **(2×10=20)**

(a) Explain optimistic concurrency control protocol in detail.

(b) Differentiate between Flat and Nested transactions. Explain 2 phase commit protocol in detail.

(c) Write short notes on the following :

(i) Transaction with replicated data.

(ii) Group communication.