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# CS-702

## B. E. (Seventh Semester)
## EXAMINATION, Dec., 2011

(Computer Science & Engg. Branch)

DISTRIBUTED SYSTEM

(CS – 702)

*Time : Three Hours*

*Maximum Marks : 100*

*Minimum Pass Marks : 35*

**Note :** Attempt all questions. All questions carry equal marks.

1. (a) What is distributed system ? Give an example of distributed system.

   (b) What is distributed transparency ? Explain the different types of distributed transparencies.

*Or*

2. (a) Assume an overlay network where processes are organised by chord system, having 17 data items and it is having 4 actual nodes {2, 6, 11, 17} :

   (i) How many bits are required for identifier space ?

   (ii) Create mapping of data item and node for the above overlay network.

   (iii) Explain the insertion of a new node having ID 14.

(b) Define a scalable distributed system and what are the challenges we face in designing of a scalable distributed system ?

3. (a) What are the characteristics of distributed file system ? How is synchronisation achieved in DFS ?

(b) What are the differences between message passing and shared memory system ?

Or

4. (a) Explain the different architectures of Distributed Share Memory.

(b) What are the semantics of file sharing ? Explain it with the help of UNIX semantics.

5. (a) What is logical clock and how do we synchronize logical clocks in Lamport's algorithm ?

(b) Consider an example where we have 8 processes, numbered from 0 to 7. Suppose that two processes detect the demise of the co-ordinator simultaneously and both decide to hold an election using the Ring algorithm, explain the selection of new co-ordinator.

Or

6. (a) In which condition multicast operation is more appropiate and why ?

(b) What are the differences between RPC and client server architecture ?

7. (a) What is meant by deadlock ? What are the necessary conditions for deadlock ?

(b) Explain the different components of Load Distributing Algorithms.

*Or*

8. (a) What are the features of a good load distribution method ? How distribution algorithms are classified ?

(b) What are the different deadlock handling strategies ? Explain a Distributed Deadlock Detection algorithm.

9. Write short notes of the following :

(a) Mach

(b) Distributed database management system

*Or*

10. (a) What is QoS (Quality of Service) and what are the tasks of QoS manager ?

(b) What is traffic shaping and which algorithm of traffic shaping is better and why ?

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