

Roll No

IT-601

B.E. VI Semester

Examination, June 2013

Distributed System

Time : Three Hours

Maximum Marks : 100

Minimum pass Marks: 35

Note: Attempt all questions.
Each question carry equal marks.

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1. a) Explain the main Design issues of Distributed Operating Systems. 10
- b) Describe the Lamport's logical clock and their limitations? Also explain the vector clock. 10

OR

2. a) Enlist requirements of distributed mutual exclusion algorithms. How performances of distributed mutual exclusion algorithms are measured? Discuss the central approach to achieve mutual exclusion in distributed systems. 10
- b) Explain any token-based distributed algorithm. 10
3. a) What are phantom deadlocks? Explain the algorithm which could detect phantom deadlocks? 10

[2]

- b) Differentiate between centralized and distributed deadlock detection? Explain the edge chasing algorithm. 10

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4. a) Write on classification of agreement problems and in what way, consensus problem is different than other problems in distributed systems. 10
- b) What are limitations of centralised deadlock detection? How it is overcome in distributed deadlock detection? 10
5. a) What are the different protocols for remote procedure calls? Explain it with neat diagrams. 10
- b) What do you mean by distributed object model? Write a short note on a RMI. 10

OR

6. a) What is the difference between a file service using the upload/download and one using the remote access model? What is the difference between tree structured directory systems from a general graph structured system? 10
- b) Explain the various operations which can be performed on a file in a distributed file system. 10
7. a) Describe how a non-recoverable situation could arise if write locks are released after the last operation of a transaction but before its commitment. 10
- b) What do you mean by Replication? Explain with appropriate example. 10

[3]

OR

8. a) Explain the Difference between linearizability and sequential consistency, and why the later is more practical to implement in general? 10
- b) Explain the two phases commit protocol for nested transaction. 10

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9. a) What is routing? What is destination based routing? 10
- b) Write short note on following :
- i) Deadlock free packet switching
- ii) ARP problem 10

OR

10. a) What is Election algorithm? Suppose that two processes detect the demise of the coordinator simultaneously and both decide to hold an election using the bully algorithm. In this situation what happens? 10
- b) Write short note on following:
- i) Object request broker (ORB) architecture
- ii) CORBA Services 10

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