

Registration no:

Total Number of Pages: 01

M.TECH
CSPC202

Second Semester Examination ~~2013~~ 2014
DISTRIBUTED OPERATING SYSTEMS

Time: 3 Hours

Max marks: 70

Answer Question No.1 which is compulsory and any five from the rest.

The figures in the right hand margin indicate marks.

- Q1. Answer the following Questions: [2X10=20]
- a) Differentiate between a network operating system and a distributed operating system?
 - b) Loosely coupled multiprocessor system is a multicomputer? Justify.
 - c) Distinguish between connection-oriented and connectionless oriented communication protocols.
 - d) How do serializers solve several deficiencies of monitors?
 - e) What is Phantom deadlock?
 - f) Differentiate between stateful and stateless servers.
 - g) What are common types of active attacks associated with message communication in a distributed system?
 - h) Distinguish between replication and caching.
 - i) What do you mean by false sharing? What is the importance of granularity of locks in combining the false sharing problem?
 - j) Why confinement problem in computer security is unsolvable?
- Q2. a) What are the major issues in designing a distributed operating system? Discuss each one. [5]
- b) Discuss important design principles that are used as a guideline for designing secure computer Systems. [5]
- Q3. a) What are the main similarities and differences between the RPC model and ordinary procedure call model? Discuss the main issues in developing a transparent RPC mechanism. [5]
- b) Differentiate between internal synchronization and external synchronization. Explain the importance of logical clocks in distributed systems. [5]
- Q4. Discuss various commonly used models for configuring Distributed Computing systems with their relative advantages and disadvantages. [10]
- Q5. a) What are the desirable features of a good distributed file system? Distinguish between mutable and immutable files. [5]
- b) Differentiate between human-oriented and system-oriented names used in distributed operating systems. Give the characteristic features of each one. [5]
- Q6. a) What do you mean by instruction level parallelism? Whether it can be achieved by uniprocessor system? Justify. [5]
- b) What is a stub? How are they generated? State their functionality and purpose. [5]
- Q7. a) Discuss various communication protocols for use in Remote Procedure calls. [5]
- b) What is a transaction? What are the two main factors that threaten the atomicity of transactions? Describe how atomicity is ensured for a transaction in both commit and abort. [5]
- Q8. Write short notes on: [any two] [5X2=10]
- a) Ring Algorithm
 - b) Lamport Logical clock
 - c) Wait-for graph
