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Total Number of Pages: 02

M.TECH
CSPC 202

2nd Semester Regular / Back Examination 2016
DISTRIBUTED OPERATING SYSTEM
Q.CODE:W761
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: **(2 x 10)**
- a) Distinguish between connection oriented and connectionless oriented communication protocols.
 - b) What is the need of clock synchronization in distributed systems?
 - c) Differentiate between safe, unsafe and deadlock states.
 - d) What are the main similarities between the RPC model and ordinary procedure call model?
 - e) Why confinement problem in computer security is unsolvable?
 - f) What do you mean by false sharing?
 - g) Differentiate between buffering and caching.
 - h) What do you mean by happened-before-relation of event ordering?
 - i) In the Two-Phase Commit Protocol, what is the purpose of logging?
 - j) What is the role of "binding agent" in client server binding?
- Q2** a) What do you mean by fault tolerance? What are transient, intermittent and permanent faults? Explain. **(5)**
- b) Discuss various communication protocols for use in Remote Procedure calls. **(5)**
- Q3** Discuss various commonly used models with their relative advantages and disadvantages for configuring Distributed Computing systems. **(10)**
- Q4** a) What is a stub? How are they generated? State their functionality and purpose. **(5)**
- b) What are the different ways of server implementation? Which is preferred in distributed system and why? **(5)**
- Q5** a) Explain Bernstein conditions for detection of parallelism. **(5)**
- b) Why election algorithms are needed in a distributed system? Explain the Bully algorithm to elect a coordinator process. **(5)**

Q6 a) Explain the different ways of dealing with the files in distributed file system. Distinguish between mutable and immutable files. **(5)**

b) Differentiate between passive and active attacks. Which of the two is more harmful and why? **(5)**

Q7 a) Explain in brief how concurrency control and transaction recovery can be made in distributed systems? **(5)**

b) What is the role of naming services in distributed systems? Discuss the desirable features of a naming system. **(5)**

Q8 Write short notes on any two: **(5 x 2)**

- a)** Lamport Logical clock
- b)** Parallel Computer Structure
- c)** Cache Consistency
- d)** Resource Allocation Graph