

Total No. of Questions : 12]

SEAT No. :

P1810

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[Total No. of Pages : 3

B.E. (Computer Engineering)
DISTRIBUTED OPERATING SYSTEMS
(2008 Course) (Semester-II)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer three questions from each section.*
- 2) *Answers to the two sections should be written in separate answer books.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*

SECTION-I

- Q1)** a) Discuss the differences between workstation server and processor pool models. [7]
- b) What is the role of stub in RPC execution? How do stubs make RPC execution transparent? [7]
- c) Explain the techniques used to overcome scalability related issues. [4]

OR

- Q2)** a) Discuss the relative advantages and disadvantages of Synchronous and Asynchronous Communication in distributed system. Explain its use in inter-process communication mechanisms. [7]
- b) Explain parameter passing issues in RPC mechanism with suitable examples. [7]
- c) Explain process addressing in distributed system. [4]
- Q3)** a) Explain in detail Lamport's Logical clock and conditions satisfied by logical clocks. [8]
- b) Explain why transient synchronous communication has inherent scalability problems, and how these could be solved? [8]

OR

P.T.O.

- Q4)** a) Discuss centralised approach for mutual exclusion. What are the necessary and sufficient conditions that mutual exclusion algorithms should satisfy? [8]
- b) What is the need of clock synchronization in distributed systems? Explain different clock synchronization algorithms. [8]
- Q5)** a) Show in Ricart Agrawala's algorithm for Mutual Exclusion, that "the critical section is accessed according to increasing order of time stamps". [8]
- b) Explain hierarchical deadlock detection algorithm with suitable example. [8]

OR

- Q6)** a) What are the basic differences between token based and non-token based algorithm for mutual exclusion? [8]
- b) What is Byzantine agreement problem? Explain the solutions to the Byzantine agreement problem. [8]

SECTION-II

- Q7)** a) List and explain important goals of distributed file system. Explain file access models in distributed file systems. [10]
- b) Explain the algorithms for implementing DSM. [8]

OR

- Q8)** a) Explain the components of Load Sharing algorithms, and discuss load sharing policies. [10]
- b) Explain task migration in distributed system with suitable example. [8]
- Q9)** a) Explain the differences between the forward and backward error recovery. [8]
- b) Explain process failure, system failure, secondary storage failure and communication medium failure in a computer system. [8]

OR
2

Q10)a) Explain in details, access control model for security in distributed operating system. [8]

b) Explain voting protocol in designing a fault tolerance system in distributed environment. [8]

Q11)a) What is web service? State the key specifications of a web service. [8]

b) Explain Service Oriented grid with suitable diagram. [8]

OR

Q12)a) Explain the grid components and their services. Discuss the major categories of resource grids. [8]

b) What is service oriented architecture? Compare service oriented architecture with component based architecture. [8]

