P1810

SEAT No. :

[4859]-213

[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

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

*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]**

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