Total No. of Questions : 12]

SEAT No. :

P2001

[Total No. of Pages : 3

[5254] - 172
B.E. (Computer Engineering)
DISTRIBUTED OPERATING SYSTEMS
(2008 Pattern)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates :

1) ***Answers to the two sections should be written in separate answer-books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Define Distributed operating systems, Distributed System and Distributed Computing. What are the issues to design distributed systems? **[10]**

b) What is meant by transparency and give examples in details migration transparency? **[8]**

OR

Q2) a) How would you incorporate persistent asynchronous communication into a model of communication based on RMIs to remote objects? **[10]**

b) Explain the parameter passing semantics in CORBA. When is call-by-reference used and when is call-by-value used? Explain the difference between the two. **[8]**

Q3) a) Describe the two key issues how the clock is adjusted in Cristian's algorithm. **[10]**

b) Explain Lamport's logical clock? What are the conditions satisfied by logical clocks? List the limitation of Lamport's clock how do overcome those. **[6]**

OR

Q4) a) What is Process Migration? Explain desirable features of a good process migration Mechanism. **[10]**

b) Explain Ring algorithms for selecting co-ordinator. **[6]**

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Q5) a) Explain distributed algorithm for Mutual Exclusion. What are the advantages and disadvantages of it over centralized algorithm. **[10]**

b) Explain Token based & Non Token based Mutual Exclusion Algorithm. **[6]**

OR

Q6) a) Write short note on following Hierarchical Deadlock Algorithms **[10]**

i) The Menasce-Muntz Algorithm.

ii) The Ho-Ramamoorthy Algorithm

b) Explain the following agreement problem **[6]**

i) Byzantine Agreement Problem

ii) Consensus Problem

iii) Interactive Consistency Problem

SECTION - II

Q7) a) Explain distributed shared memory architecture. What is the main motivation behind implementing DSM. **[10]**

b) How checkpointing is done in distributed database systems? Write an algorithms for checkpointing in distributed database systems. **[8]**

OR

Q8) a) Write short note on : **[10]**

i) Log structured file systems

ii) Google file systems

b) How does granularity affect DSM system performance? & What are the various advantages of DSM systems. **[8]**

Q9) a) What is distributed scheduling? Why it is needed? What are the different issues in load distribution? Explain receiver initiated algorithm in detail.**[10]**

b) Explain with suitable example Backward and forward error recovery.**[6]**

OR

Q10)a) How do we achieve the security in the distributed operating system? Explain it with access matrix model for security. **[10]**

b) What are the features of capability based addressing? Also discuss advantages and disadvantages of capability based protection systems.**[6]**

Q11)a) Explain in brief types/classification of cluster. Compare cluster computing with Grid Computing. **[10]**

b) What are web services? How do you compare it to components? And then Compare between service oriented architecture and component based architecture. **[6]**

OR

Q12)a) Explain the following system. **[10]**

i) Grid computing

ii) Service Oriented Architecture

b) What is Cloud computing? Explain types of cloud based on location and services. **[6]**

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