Total No. of Questions : 12]

SEAT No. :

P2800

[Total No. of Pages : 3

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B.E.(Computer Engineering)

DISTRIBUTED OPERATING SYSTEMS

(2008 Pattern) (Semester - II)

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

Instructions to the candidates:

1) ***Answer any three questions from each section.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures to the right side indicate full marks.***
4) ***Neat diagrams must be drawn wherever necessary.***
5) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) Differentiate between Network operating system and Distributed operating systems w.r.t. degree of transparency, basis of communication and resource management. **[10]**

b) What is meant by transparency and give examples of different types of transparency. **[8]**

OR

Q2) a) Explain what is meant by absolute ordering, consistent ordering and causal ordering of messages in a distributed message passing system. Give a mechanism to implement each one of these. **[10]**

b) What is IDL and how is it used? What is the role of the Interface Repository in CORBA. Where and how is it used? **[8]**

Q3) a) Explain Lamport's logical clock? What are the conditions satisfied by logical clocks? List the limitation of Lamport's clock how do overcome those. **[10]**

b) What are the major issues in designing a distributed operating systems?**[6]**

OR

P.T.O.

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

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

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) Discuss the impact of message loss on following deadlock detection algorithms. **[10]**

i) A path pushing algorithms.

ii) Edge chasing algorithms.

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) What is distributed scheduling? Why it is needed? What are the different issues in load distribution? Explain receiver initiated algorithm in detail.**[8]**

OR

Q8) a) What are the various design issues in implementation of distributed file systems? **[10]**

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

Q9) a) How checkpointing is done in distributed database Systems? Write an algorithms for checkpointing in distributed database Systems. **[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 the following system. **[10]**

i) Grid computing

ii) Service Oriented Architecture

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 in brief types/Classification of cluster. Compare cluster computing with Grid Computing. **[10]**

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