

Total No. of Questions : 12]

SEAT No. :

P2800**[5154]-182**

[Total No. of Pages : 3

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

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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]

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- 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]

