



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Eighth Semester, B.E. - Information Science and Engineering

Semester End Examination; May/June - 2018

Distributed Operating System

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

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| 1 a. | Illustrate various models used for building a distributed computing system. | 10 |
| | b. When the communication is said to be synchronous? Illustrate the synchronous mode of communication with both send and receive primitives. | 8 |
| | c. What is Distributed Computing Environment (DCE)? | 2 |
| 2 a. | Explain any two issues in designing a distributed operating system in detail. | 8 |
| | b. Discuss the two types of process addressing with respect to message passing system. | 6 |
| | c. Illustrate the problems related to the failure of nodes or communication link during inter process communication. | 6 |

UNIT - II

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|------|---|----|
| 3 a. | Describe the communication protocol used for RPC's. | 12 |
| | b. List and explain the design and implementation issues of Distributed Shared Memory (DSM). | 8 |
| 4 a. | Explain with an example, the operations on files considering a server for a byte-stream files in stateful server. | 8 |
| | b. With a typical RPC call message format explain reply messages. | 8 |
| | c. Explain the parameter passing semantics of an RPC mechanism. | 4 |

UNIT - III

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| 5 a. | Discuss the structure of shared memory space. | 7 |
| | b. Explain the centralized algorithm in clock synchronization algorithm. | 8 |
| | c. Describe the sequential consistency model. | 5 |
| 6 a. | What are the necessary conditions for deadlock situation to occur in system? | 6 |
| | b. Explain the concepts of thrashing in distributed shared memory. | 8 |
| | c. Compare the two election algorithm. | 6 |

UNIT - IV

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| 7 a. | List and explain the features of a good global scheduling algorithm. | 8 |
| | b. What are the advantages of process migration? | 8 |
| | c. List the four major sub activities involved in process migration. | 4 |

- 8 a. Discuss the issues in designing load sharing algorithms. 10
- b. Explain the process of migration by illustrating the flow of execution. 10

UNIT - V

- 9 a. Discuss the features for thread scheduling supported by threads package. 8
- b. List the two main purposes of using files. 4
- c. Illustrate the models used for organizing threads. 8
- 10 a. Explain the two models of file. 8
- b. Highlight the key decisions in file caching scheme for distributed file system. 10
- c. Describe file-sharing semantics. 2

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