

M.Tech. Computer Science & Engineering (CBCS Pattern) Semester - I  
**PCSS12 - Advanced in Operating System Design**

P. Pages : 1

Time : Three Hours



**GUG/S/23/10941**

Max. Marks : 70

- Notes :
1. Solve **any five** questions.
  2. All questions carry equal marks.
  3. Due credit will be given to neatness and adequate dimensions.
  4. Assume suitable data wherever necessary.
  5. Diagrams and Chemical equation should be given wherever necessary.
  6. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Discuss mechanisms for building distributed file system. 7  
b) Discuss various issues in distributed operating system. 7
2. a) Discuss in detail the Ricart-Agrawala Non-Token based Distributed mutual exclusion algorithm. 7  
b) Write a short note on : Lamport's logical clocks? 7
3. a) Explain Snghal's Heuristic algorithm in detail. Also write what data structure used for same. 7  
b) Explain Orphan messages and the Domino effect with a diagram. 7
4. a) Discuss Suzuki-Kasami broadcast algorithm for distributed mutual exclusion. 7  
b) Explain in brief hierarchical deadlock detection Algorithm. 7
5. a) Describe an Edge-chasing Algorithm for deadlock detection in Distributed systems. 7  
b) Explain how voting protocols work for fault tolerant systems. 7
6. a) Describe the Migration Algorithm for implementing distributed shared memory (DSM)? 7  
b) Explain the architecture of wireless networks as a Distributed system. 7
7. a) Discuss Sender Initiated Load distributing algorithm. 7  
b) Discuss file system coda. 7
8. a) What is backward and forward error recovery? Hence discuss different backward error recovery approaches. 7  
b) Discuss about a Live-lock problem and explain strongly consistent set of checkpoints. 7

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