

## Seventh semester examination-2006

### ADVANCE OPERATING SYSTEM

Full marks-70

Time-3hrs

*Answer Question No.1 which is compulsory and any five from the rest.  
The figure in the right side margin indicate the mark.*

- 1) Answer the following questions:
  - a) List the key characteristics responsible for the usefulness of Distributed Systems.
  - b) Define the term “transparency” in a distributed system.
  - c) What is naming service?
  - d) What was driven the move from centralized to distributed systems?
  - e) In what way does an RPCCall resemble/differ from a local procedure call?
  - f) What is meant by the term idempotent operation?
  - g) Discuss and compare Monolithic versus micro kernels
  - h) Explain the intuitive appeal of deadlock avoidance over deadlock prevention.
  - i) What are the essential feature of a protection system?
  - j) Define and differentiate between Synchronous and asynchronous computations?
2. a) Define and briefly discuss the term “transparence” as it pertains to distributed systems. [5]  
b) Discuss the reason why it is not possible to provide wide common (global) clock [5]
- 3) a) What is consistency maintainance in distributed systems and what are its primary categories [5]  
b) Develop a system model for deadlock then using a resource allocation graph illustrate a deadlock.
- 4) a) Discuss a technique by which RPCs (within the same computer) can be replaced in a Threaded environment for increasing performance. [5]  
b) In relation to Lamport’s Logical clocks use a spce time diagram to show events that are

- i) Casually related.
- ii) Concurrent.
- 5) a) Discuss the matrices used in evaluating the performance of Distributed Mutual Exclusion Algorithms [5]
- b) Discuss the issue of creating a new process versus creating a thread [5]
- 6) a) Explain the mechanism of receiver initiated load distribution algorithm in distributed System. [5]
- b) What is the basic concept of Network File System? Discuss the features of sun NFS Distributed file system. [5]
- 7) a) Discuss the generalized Non-Token based Distributed Mutual Exclusion algorithm. [5]
- b) What is the basic concepts of Distributed shared memory (DSM)? What are the main approaches to the implementation of DSM.
- 8) a) What are the different methods to implant access matrix for security and protection of System resources. [5]
- b) What are the major issues in designing an operating system for multi processor system? [5]