

**II B.Tech. II Semester Regular Examinations, April/May -2005**  
**OPERATING SYSTEMS**  
**( Common to Information Technology and Computer Science & Systems Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

1. (a) Explain the Multiprogrammed batched system with an example.  
(b) Describe the features of timesharing systems with an example
2. Discuss the attributes of the process. Describe the typical elements of process control Block.
3. Explain the state of the process Queue for the Readers / Writers problem and get the solution to the same by using message -passing
4. (a) How mutual exclusion, hold and wait and circular wait are different from each other? Explain with the help of examples.  
(b) Write an algorithm to detect the occurrence of deadlocks
5. (a) Another placement algorithm for dynamic partitioning is referred to as worst fit. In this case, the largest free block of memory is used for bringing in a process. Discuss the pros and cons of this method compared to first-next and best fit.  
(b) What is the average length of the search for worst-fit.
6. (a) What are the criteria based on which scheduling policies are evaluated.  
(b) Describe round robbin and feedback scheduling policies.
7. (a) Explain in detail the four terms field, record, file and database with respect to files.  
(b) List the objectives and the requirements for a file management system
8. (a) What are the security requirements of a computer and network?  
(b) Explain different types of threats.  
(c) Explain the computer system assets.

\*\*\*\*\*

**II B.Tech. II Semester Regular Examinations, April/May -2005**  
**OPERATING SYSTEMS**  
**( Common to Information Technology and Computer Science & Systems Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

1. What is OS? Describe the different types of Operating systems with the examples.
2.
  - (a) What is meant by process preemption?
  - (b) What is swapping and what is its purpose?
  - (c) What is the difference between process switching and context switching?
  - (d) What is the difference between an interrupt and a trap.
3. What is Readers/Writers problem? Explain the method of solving the problem by using Semaphores with Writers having priority.
4. Give the conditions for deadlock and explain the methods of preventing deadlock.
5.
  - (a) Define Memory Management.
  - (b) Explain in detail the requirements that memory management needs to satisfy
6. Write short notes of the following
  - (a) Random disk scheduling
  - (b) Priority disk scheduling
  - (c) Disk Cache
7.
  - (a) Explain in detail the four terms field, record, file and database with respect to files.
  - (b) List the objectives and the requirements for a file management system
8. Write short notes on
  - (a) Viruses
  - (b) Worms
  - (c) Logic bomb
  - (d) Trap door

\*\*\*\*\*

**II B.Tech. II Semester Regular Examinations, April/May -2005**  
**OPERATING SYSTEMS**  
**( Common to Information Technology and Computer Science & Systems Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

1. What are the important properties of I/O organization? Explain the I/O communication techniques with an example.
2. Discuss the attributes of the process. Describe the typical elements of process control Block.
3. What are the requirements for mutual exclusion? Explain them in detail.
4. What are the principles of deadlock? And explain in detail the two categories of resources.
5.
  - (a) Explain the process of loading programs into main memory.
  - (b) Write in brief on the following memory management techniques comparing their relative strengths and weaknesses.
    - i. Fixed Partitioning
    - ii. Simple Segmentation
    - iii. Virtual Memory Paging
    - iv. Dynamic Partitioning
  - (c) Describe the Placement Algorithm.
6.
  - (a) What are the criteria based on which scheduling policies are evaluated.
  - (b) Describe round robbin and feedback scheduling policies.
7.
  - (a) Explain file system software architecture.
  - (b) What are the important criteria in choosing a file organization
  - (c) Explain the file and sequential file organization.
8. Write short notes on:
  - (a) Trojan Horse defense
  - (b) Trojan horses

\*\*\*\*\*

**II B.Tech. II Semester Regular Examinations, April/May -2005**  
**OPERATING SYSTEMS**  
**( Common to Information Technology and Computer Science & Systems Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

1. Mention the various registers and their functions under the following two categories.
  - (a) User-visible registers
  - (b) Control and status registers
2.
  - (a) What is meant by process preemption?
  - (b) What is swapping and what is its purpose?
  - (c) What is the difference between process switching and context switching?
  - (d) What is the difference between an interrupt and a trap.
3. What are the requirements for mutual exclusion? Explain them in detail.
4. What is dining philosophers problem? Device an algorithm to solve the problem using Semaphore.
5. Write short notes on the following:
  - (a) Page Table structure
  - (b) Translation look-aside buffer.
  - (c) Segmentation
  - (d) Paging
6. Describe various short term scheduling policies
7.
  - (a) Explain in detail the four terms field, record, file and database with respect to files.
  - (b) List the objectives and the requirements for a file management system
8. Write notes on
  - (a) intrusion detection
  - (b) password protection

\*\*\*\*\*