

Code No: 07A7EC17

R07**Set No. 2****IV B.Tech I Semester Examinations, November 2010****OPERATING SYSTEMS****Common to Bio-Medical Engineering, Electronics And Telematics,
Electronics And Communication Engineering****Time: 3 hours****Max Marks: 80****Answer any FIVE Questions
All Questions carry equal marks**

1. Explain Producer/Consumer problem and suggest a solution for the same. [16]
2. Explain paging scheme for memory management. Discuss the paging hardware and paging model. [16]
3. (a) Why is the average search time to find a record in a file less for an indexed sequential file than for a sequential file? Explain.
(b) What is the difference between a file and a database?
(c) What are typical operations that may be performed on a directory? [6+4+6]
4. (a) Discuss the properties of multilevel security. Explain how reference monitor keeps track of these properties?
(b) What is a virus? Explain the nature of viruses. [8+8]
5. Some CPUs support for more than two modes of operation. What are the advantages of using multiple modes? [16]
6. Describe about mechanism used by windows to implement Synchronization of Synchronization objects. [16]
7. Draw and explain about General Structure of Operating System control tables. [16]
8. Discuss how the following pairs of scheduling criteria conflict in creation settings:
(a) CPU utilization and response time.
(b) Average turn around time and maximum waiting time.
(c) I/O device utilization and CPU utilization [6+6+4]

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1. Define the essential properties of the following types of operating systems:
 - (a) Batch
 - (b) Interactive
 - (c) Network
 - (d) Parallel[4×4]
2. Explain intrusion detection. Discuss the approaches to intrusion detection and explain the significance of audit records. [16]
3. Explain the operating system design issues for I/O management. [16]
4. Draw and explain process state transition diagram with two suspended states. [16]
5. Write a solution to the Bounded-Buffer Producer/Consumer problem using semaphores. [16]
6. Explain the solution to Dining Philosophers Problem using Semaphores. [16]
7. (a) Contrast resident set with working set.
(b) What are the advantages of an inverted page table? Explain. [8+8]
8. (a) Directories can be implemented either as “special files” that can be only accessed in limited ways or as ordinary data files. What are the advantages and disadvantages of each approach.
(b) Explain three file allocation methods. [8+8]

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R07**Set No. 1****IV B.Tech I Semester Examinations, November 2010****OPERATING SYSTEMS****Common to Bio-Medical Engineering, Electronics And Telematics,
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1. What are the various classes of interrupts? Explain. [16]
2. What are the requirements that must be satisfied for solving Critical Section Problem explain with suitable example. [16]
3. Explain the security threats to various computer system assets. [16]
4. Make a comparison of various scheduling policies available for uniprocessor scheduling. Discuss the characteristics such as selection function, Decision mode, Throughput, Response time, Overhead, Starvation etc. [16]
5. Explain about the Resource Allocation Denial with reference to Safe-state and Unsafe-state. [16]
6. Compare the main memory organization scheme of contiguous memory allocation, pure segmentation and pure paging with respect to the following issues.
 - (a) External fragmentation
 - (b) Internal fragmentation
 - (c) Ability to share code across processes. [5+5+6]
7. (a) Consider a hierarchical file system in which free disk space is kept in a free space list.
 - i. Suppose the pointer to free space is lost. Can the system reconstruct the free space list?
 - ii. Suggest a scheme to ensure that the pointer is never lost as a result of a single memory failure.
- (b) Why are physically contiguous files faster to read?
- (c) What is a FAT file System? [6+5+5]
8. (a) What are the various examples of the uses of the threads in a single user multiprocessing system?
- (b) What are the key benefits of threads derived from the performance implications? [8+8]

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R07**Set No. 3****IV B.Tech I Semester Examinations, November 2010****OPERATING SYSTEMS****Common to Bio-Medical Engineering, Electronics And Telematics,
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1. Explain about Deadlock Prevention. [16]
2. What are the major activities of an operating system with regard to memory management? [16]
3. (a) Describe the logical structure of the I/O function for a local peripheral device that communicate in a simple fashion, such as a stream of bytes.
(b) Discuss about the buffer swapping techniques in detail. [8+8]
4. Draw and explain about process state transition diagram with one suspended state. [16]
5. (a) What is the cause of thrashing? How does the system detect thrashing, and once detected what steps are taken by the system to eliminate it?
(b) Discuss about demand paging technique. [8+8]
6. What is a trusted system? Explain the reference monitor concept and multilevel secure system in detail. [16]
7. (a) Compare disk compaction with memory compaction. How are they same and how are they different?
(b) How do inodes work in UNIX file system? [8+8]
8. Explain how the Processes accessing shared data is protected by a semaphore with a relevant diagram. [16]
