www.firstranker.com

Code No: 07A7EC50 **R07** **Set No. 2**

IV B.Tech I Semester Examinations,November 2010
OPERATING SYSTEMS
Common to Civil Engineering, Electronics And Instrumentation Engineering
Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Explain program threats and system threats.
   (b) Explain Encryption Techniques. [8+8]
2. What is virtual memory? Explain in detail about the virtual memory with a neat diagram. [16]
3. Explain the following structures:
   (a) Single level directory
   (b) Tree-structured directory. [8+8]
4. (a) What is a boot record? Which files are loaded by it?
   (b) Bitmaps are not often used for main memory allocation. They are commonly used for disk space allocation. Justify. [6+10]
5. (a) What are the various ways of defining deadlocks?
   (b) Explain the Resource-Request algorithm with an example. [6+10]
6. Write a bounded-buffer monitor in which the buffer are embedded within the monitor itself. [16]
7. Explain the following transitions:
   (a) Blocked/Suspended → Blocked.
   (b) Running → Ready/Suspended.
   (c) Any State → Exit. [5+5+6]
8. How does the distinction between monitor mode and user mode functions as a rudimentary from protection system. [16]

⋆ ⋆ ⋆ ⋆ ⋆

FIRSTRANKER

www.firstranker.com

www.firstranker.com

Code No: 07A7EC50 **R07** **Set No. 4**

IV B.Tech I Semester Examinations,November 2010
OPERATING SYSTEMS
Common to Civil Engineering, Electronics And Instrumentation Engineering
Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) What is a semaphore? What are the various operations defined on it?
   (b) What is the difference between weak semaphore and strong semaphore? Explain. [8+8]
2. Write short notes on the following:
   (a) Viruses
   (b) Worms
   (c) Logic bomb
   (d) Trap door. [4+4+4+4]
3. Explain the reliability and protection mechanisms followed in UNIX file system. [16]
4. Explain the following terms
   (a) Hard real time operating systems.
   (b) Soft real time operating systems. [8+8]
5. Consider the following page replacement algorithms. Rate each of these algorithms on a five point scale from 'bad' to perfect, according to their page fault rate. Separate those algorithms that suffer from Belady's anamoly from those that do not.
   (a) LRU replacement
   (b) FIFO replacement
   (c) Optimal replacement
   (d) Second chance replacement. [4+4+4+4]
6. Explain in detail about the scheduling in a multiprocessor system. [16]
7. (a) Explain various I/O Buffering schemes.
   (b) Differentiate between block oriented devices and stream oriented devices. Give examples for each. [8+8]
8. Summarize the operations of the following mechanisms along with its advantages and disadvantages:

FIRSTRANKER

www.firstranker.com

www.firstranker.com

(a) Polled mode operation
(b) Programmed I/O
(c) Interrupt driven I/O
(d) DMA. [4+4+4+4]

⋆ ⋆ ⋆ ⋆ ⋆

FIRSTRANKER

www.firstranker.com

www.firstranker.com

Code No: 07A7EC50 **R07** **Set No. 1**

IV B.Tech I Semester Examinations,November 2010
OPERATING SYSTEMS
Common to Civil Engineering, Electronics And Instrumentation Engineering
Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Write short notes on the following:
   (a) Random disk scheduling
   (b) Priority disk scheduling
   (c) Disk Cache. [5+5+6]
2. (a) Explain the difference between logical and physical addresses.
   (b) Explain the difference between internal and external fragmentation. [8+8]
3. What are the requirements of mutual exclusion? [16]
4. Explain about programmed I/O technique for input of a block of data with relevant diagram. [16]
5. Explain how deadlocks can be avoided with an algorithm. [16]
6. (a) Discuss how performance optimizations for file systems may result in difficulties in maintaining the consistency of the system in the event of computer crashes with an example.
   (b) Explain why logging metadata updates ensures recovery of a file system after a file-system crash. [8+8]
7. (a) What are the two separate and potentially independent characteristics embodied in the concept of the process? Discuss.
   (b) What resources are typically shared by all of the threads of a process? [8+8]
8. (a) Describe why authentication is important for file protection.
   (b) Describe the merits and demerits of performing file protection checks at the time of file open and at the time of every read and write operation. [8+8]

⋆ ⋆ ⋆ ⋆ ⋆

FIRSTRANKER

www.firstranker.com

www.firstranker.com

Code No: 07A7EC50 **R07** **Set No. 3**

IV B.Tech I Semester Examinations,November 2010
OPERATING SYSTEMS
Common to Civil Engineering, Electronics And Instrumentation Engineering
Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) What are the different modes of Interrupt? Explain how is polling achieved?
   (b) Explain about the interrupt driven I/O cycle. [8+8]
2. (a) Explain about Operating system as resource Manager
   (b) Describe the serial processing OS. [8+8]
3. Explain the following:
   (a) Two level directory
   (b) Acyclic-graph directory. [8+8]
4. Explain the Concurrence problem with simple example. [16]
5. (a) Explain any four scheduling algorithms with their merits and demerits.
   (b) Explain the various disk scheduling policies. [8+8]
6. (a) What is two-level paging? Explain with a neat diagram.
   (b) Explain the address translation in a paging system using a neat diagram. [8+8]
7. (a) Secret-key cryptography is more efficient than public-key cryptography, justify your answer.
   (b) Distinguish between public key, private key and secrete key with examples. [8+8]
8. Discuss the reasons why operating system might require accurate information on how blocks are stored on a disk. How can the OS improve the performance of the file system with this knowledge? [16]

⋆ ⋆ ⋆ ⋆ ⋆

FIRSTRANKER

www.firstranker.com