Code No: 07A7EC17 · · · · · · · R07 · · · · · · · Set No. 2

IV B.Tech I Semester Examinations,MAY 2011
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
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1. (a) Discuss the delay elements involved in a disk read or write.

   (b) Explain SCAN, C- SCAN, F- SCAN disk scheduling algorithms. [6+10]

2. Explain various solutions for critical section problem for two processes. [16]

3. Draw and explain about five-state process model. [16]

4. What are the various events that occur when an I/O device completes an I/O operation? Explain. [16]

5. (a) List and explain three blocking methods.

   (b) What is the relationship between a pathname and a working directory?

   (c) What criteria are important in choosing a file organization? [6+5+5]

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. Explain the following LINUX Kernel concurrency mechanisms

   (a) Atomic Integer Operations

   (b) Atomic Bitmap Operations. [16]

8. (a) Discuss the three options available in Windows 2000 for requesting access.

   (b) Describe the generic access of Windows 2000.

   (c) How is the AES expected to be an improvement over triple DES? [6+5+5]

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R07

Set No. 4

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OPERATING SYSTEMS
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Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks
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1. (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]

2. (a) Discuss the types of operations that may be performed on the directory.

   (b) Describe the structure of file directory. [8+8]

3. Write the short notes on the following

   (a) Race Condition

   (b) Process Interaction [8+8]

4. (a) Explain digital immune system.

   (b) Give the categorization of viruses. [10+6]

5. (a) What requirements are memory management intended to satisfy?

   (b) Why is the capability to relocate process desirable?

   (c) What is the difference between logical, relative and physical addresses? [6+5+5]

6. Draw and explain process state transition diagram with two suspended states.
   [16]

7. Explain the following Inter- processor Communication Mechanisms in UNIX for the Deadlocks.

   (a) Semaphores

   (b) Signals [16]

8. Draw and explain the changes in memory and register when an interrupt occurs after the instruction at location N. [16]

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Code No: 07A7EC17   **R07**   **Set No. 1**

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OPERATING SYSTEMS
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Electronics And Communication Engineering

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. Explain about Deadlock Detection.   [16]

2. What are the various reasons for process suspension? Explain.   [16]

3. Explain file sharing. Discuss about the access right and management of simultaneous access.

        [16]

4. What are the major activities of an operating system with regard to process management?   [16]

5. What the design cahracteristics of Message Systems used for inter process communicatoin and synchronization?   [16]

6. Discuss about traditional UNIX process scheduling. Illustrate with an example.

        [16]

7. (a) What are the advantages of decomposing user operation in to elementary actions?

   (b) What is a Zombie? Explain.

   (c) Describe virus life cycle.   [6+5+5]

8. (a) A computer has four page frames. The time of loading, time of last access and the R and M bits for each page are as shown below (the times are in clock ticks):

Page	Loaded	Last ref	R	M
0	126	279	0	0
1	230	260	1	0
2	120	272	1	1
3	160	280	1	1

   i. Which page will FIFO replace
   ii. Which page will LRU replace
   iii. Which page will second chance replace

   (b) In a fixed-partitioning scheme, what are the advantages of using unequal-size partitions?   [9+7]

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Code No: 07A7EC17 | **R07** | **Set No. 3**

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Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. Explain about Deadlock Avoidance. [16]

2. Specify the purpose of the following registers:

   (a) base register

   (b) limit register

   (c) memory address register

   (d) relocation register

   (e) memory buffer register

   (f) page-table base register

   (g) page-table length register

   (h) fence register. [8×2]

3. Explain various techniques implemented for free space management, discuss with suitable examples. [16]

4. What are the main differences between operating systems for Mainframes and PCs? Discuss. [16]

5. Draw and explain about process state transition diagram with one suspended state. [16]

6. 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]

7. Explain the Readers/Writers problem and its solutions. [16]

8. (a) Explain Windows 2000 security structures.

   (b) Discuss the purpose of salt in UNIX password scheme. [10+6]

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