Code No: N0424/R07

Set No. 1

IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
OPERATING SYSTEMS
(Common to Electronics & Communication Engineering, Bio-Medical
Engineering and Electronics & Telematics)

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. What are the various classes of interrupts? Explain.   [16]

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

3. Explain how process synchronization is helpful required for executing programs?
                                                                   [16]

4. Explain about Deadlock Avoidance.   [16]

5. 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]

6. What is the difference between preemptive and non preemptive scheduling? Explain
   an algorithm for each scheduling type.   [16]

7. List and explain the information elements of a File directory.   [16]

8. (a) Explain the protection spectrum offered by operating system.
   (b) Make a comparison of Passive threats with active threats.   [8+8]

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Code No: N0424/R07

$$\boxed{\textbf{Set No. 2}}$$

IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
OPERATING SYSTEMS
(Common to Electronics & Communication Engineering, Bio-Medical
Engineering and Electronics & Telematics)

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

Answer any FIVE Questions
All Questions carry equal marks
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1. Some CPUs provide for more than two modes of operation. What are two possible uses of these multiple modes? Explain. [16]

2. (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]

3. Explain the solution for the critical section problem for multiple processes. [16]

4. Explain about Deadlock Avoidance. [16]

5. Most systems allow program to allocate more memory during execution. Discuss about the requirements to support dynamic memory allocation in the following schemes.

   (a) Contiguous- memory allocation.

   (b) Pure segmentation.

   (c) Pure paging. [6+5+5]

6. (a) Discuss with examples the three types of processor scheduling.

   (b) Differentiate between turn around time and response time. [12+4]

7. Explain file sharing. Discuss access right and management of simultaneous access. [16]

8. (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]

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Code No: N0424/R07

Set No. 3

IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
OPERATING SYSTEMS
(Common to Electronics & Communication Engineering, Bio-Medical Engineering and Electronics & Telematics)

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

Answer any FIVE Questions
All Questions carry equal marks
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1. What are the three different techniques for the I/O communication? Explain in detail. [16]

2. Explain the following transitions:

   (a) Blocked → Blocked/Suspended.
   (b) Blocked/Suspended → Ready/Suspended.
   (c) Ready/Suspended → Ready. [5+5+6]

3. What are the requirements of mutual exclusion? [16]

4. Explain about Deadlock Prevention. [16]

5. Explain about address binding for a user program and discuss multi step processing of a user program. [16]

6. Suppose the head of a moving- head disk with 200 tracks, numbered 0 to 199, is currently serving a request at track 143 and has just finished a request at track 125. If the queue of requests is kept in FIFO order: 86, 147, 91, 177, 94, 150, 102, 175, 130. What is the total head movement to satisfy these requests for the following disk scheduling algorithms.

   (a) FCFS
   (b) Random
   (c) PRI
   (d) SCAN
   (e) SSTF
   (f) C- SCAN [16]

7. (a) Explain sequential file and indexed sequential file.
   (b) Discuss access control information elements of a file directory. [8+8]

8. (a) Explain digital immune system.
   (b) Give categorization of viruses. [10+6]

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Code No: N0424/R07

Set No. 4

IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
OPERATING SYSTEMS
(Common to Electronics & Communication Engineering, Bio-Medical Engineering and Electronics & Telematics)

Time: 3 hours   **Max Marks: 80**
Answer any FIVE Questions
All Questions carry equal marks
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1. Draw and explain how the interrupt occurs after instruction at location N for the changes in memory and registers. [16]

2. What are various steps involved in creating a process? Discuss in detial? [16]

3. What are the requirements of mutual exclusion? [16]

4. Explain about Deadlock Prevention. [16]

5. (a) A process references five pages A, B, C, D and E in the following order:
   A; B; C; D; A; B; E; A; B; C; D; E Assume that the replacement algorithm is FIFO find the number of page transfer during this sequence of reference starting with an empty main memory with these pages frames. Repeat for four pages frames.

   (b) Explain Resident set Management. [8+8]

6. (a) What are the difference between short-term, medium-term and long-term scheduling.

   (b) Discuss with suitable examples any two uni processor scheduling algorithms. [6+10]

7. (a) Discuss about UNIX block addressing scheme.

   (b) Explain the concept of reliability with respect to secondary storage management. [8+8]

8. (a) Explain the various password selection strategies.

   (b) Discuss about UNIX password scheme. [8+8]

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