Code No: N0424 **R07** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, February 2012
OPERATING SYSTEMS
(Common to Electronics & Communication Engineering, Bio-Medical Engineering)

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

Answer any FIVE Questions
All Questions carry equal marks

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1. Distinguish the following I/O methods with appropriate diagrams.
   (a) Synchronous
   (b) Asynchronous [8+8]
2. Explain the following transitions:
   (a) Blocked/Suspended → Blocked.
   (b) Running → Ready/Suspended.
   (c) Any State → Exit. [5+5+6]
3. What are the requirements of mutual exclusion? [16]
4. Explain about the Resource Allocation Denial with reference to Safe-state and Unsafe-state. [16]
5. Most machines do not have either paging or segmentations hardware. If a problem requires a very large address space, can either of these schemes be implemented in software? Sketch how which would be easier, paging or segmentation? Justify. [16]
6. (a) Discuss with examples the three types of processor scheduling.
   (b) Differentiate between turn around time and response time. [12+4]
7. (a) What is FAT? Discuss its role in secondary storage management.
   (b) Differentiate between spanned and unspanned record blocking method. [8+8]
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** **Set No. 2**

IV B.Tech I Semester Supplementary Examinations, February 2012
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. What are the various characteristics of hypothetical machine? [16]
2. Draw and explain about General Structure of Operating System control tables.[16]
3. Write the short notes on the following
   (a) Race Condition
   (b) Process Interaction [8+8]
4. Explain the deadlock using consumable resources with an example. [16]
5. Explain segmentation scheme for memory management. Give the segmentation hardware. [16]
6. Make a comparison of the following disk scheduling algorithms.
   (a) Shortest service time first
   (b) SCAN
   (c) Last in First Out
   (d) FSCAN. [16]
7. (a) What is FAT? Discuss its role in secondary storage management.
   (b) Differentiate between spanned and unspanned record blocking method. [8+8]
8. Write a note on:
   (a) Access control list of Windows 2000.
   (b) Standard access types of Windows 2000.
   (c) Access tokens of Windows 2000.
   (d) Access mask of Windows 2000. [4+4+4+4]

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Code No: N0424 **R07** **Set No. 3**

IV B.Tech I Semester Supplementary Examinations, February 2012
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. Explain about the transfer of control through interrupts with neat schematic diagram. [16]
2. Draw and explain the Thread structure for Adobe PageMaker. [16]
3. How can Semaphores be used to achieve mutual exclusion? Explain with an example. [16]
4. Describe a system model for study of deadlock situation. [16]
5. (a) Explain forward- mapped page table scheme for structuring the page table.
   (b) What is an inverted page table? How is it useful in structuring the page table? [8+8]
6. What is the difference between preemptive and non preemptive scheduling? Explain an algorithm for each scheduling type. [16]
7. Explain various techniques implemented for free space management, discuss with suitable examples. [16]
8. (a) What is a capability ticket? Explain with an example.
   (b) Explain traffic analysis. [8+8]

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Code No: N0424 **R07** **Set No. 4**

IV B.Tech I Semester Supplementary Examinations, February 2012
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. Draw the relevant diagram showing the portions of memory and processor register for a partial program execution. [16]
2. Draw and explain the Thread structure for Adobe PageMaker. [16]
3. (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]
4. Write the test for safety algorithm for Deadlock detection. [16]
5. Write a note on:
   (a) compaction
   (b) External fragmentation
   (c) Internal fragmentation
   (d) 50- percent rule oh fragmentation [4+4+4+4]
6. What is starvation? Which of the following algorithms could result in starvation FCFS, SPN, SRT and Priority. How to overcome the problem of starvation? Discuss. [16]
7. (a) Describe the key features of NTFS.
   (b) Discuss file allocation method in UNIX file. [8+8]
8. (a) Explain in detail active threats.
   (b) Discuss about Protection of memory. [8+8]

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