

D 70324

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Name

Reg. No.

**FIFTH SEMESTER B.TECH. (ENGINEERING) (09 SCHEME) DEGREE
EXAMINATION, NOVEMBER 2014**

CS / IT / PTCS 09 504—OPERATING SYSTEMS

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all questions.

1. Differentiate multiprogramming and multiprocessing.
2. Define a deadlock. When does it occur ?
3. Differentiate logical address and physical address.
4. State the advantages of combining paging and segmentation methods.
5. How is authentication done for a file system ?

(5 × 2 = 10 marks)

Part B

Answer any four questions.

1. Write down the functions of an operating system.
2. With a neat sketch, explain the various states of a process.
3. Explain the deadlock prevention mechanism.
4. Explain the fixed partitioning and the variable partitioning techniques in memory management.
5. Explain about the directories and their implementation.
6. Write a note on Microsoft windows NT.

(4 × 5 = 20 marks)

Part C

1. Define a thread. How is it different from a process ? Explain the various multithreading models in detail.

Or

2. Explain how secondary storage management is done by the operating system.
3. Write a solution for the dining philosophers problem using semaphores.

Or

4. Explain the banker's algorithm and justify how deadlock avoidance is implemented using the same.

Turn over

5. Explain the working of virtual memory in detail.

Or

6. Consider a simple segmentation system that has the following segment table :

Starting Address	Length (bytes)
660	248
1752	422
222	198
996	604

For each of the following logical address, determine the physical address or indicate if a segment fault occurs :

(a) 0,198.

(b) 3,444

(c) 2,156.

(d) 0,222.

(e) 1,530.

7. Explain the various file allocation techniques in detail.

Or

8. Explain about the Unix Kernel in detail.

(4 × 10 = 40 marks)