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FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION NOVEMBER 2013

IT/CS 09 504—OPERATING SYSTEMS

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all the questions.

1. Differentiate monolithic Kernel and microkernel.

2. What is meant by concurrent processing ?

3. Define mutual exclusion and mention its need.

4. Compare the paging and segmentation mechanism.

5. How is authorization done for a file system ?

(5 × 2 = 10 marks)

Part B

Answer any four questions.

1. Explain the operating system organization in detail.

2. Differentiate pre-emptive scheduling and non-pre-emptic scheduling mechanism with examples.

3. How is deadlock detection and recovery done ?

4. What is meant by logical, physical and relative addresses ? Give examples.

5. Explain the paging with segmentation concept with an example.

6. Explain directories and their implementation mechanisms.

(4 × 5 = 20 marks)

Part C

Answer all the questions.

1. Explain in detail how device management is done in operating system.

Or

2. Explain how buffering and device management is done in an operating system.

3. Explain the shortest-job first and the shortest remaining time algorithms in detail with suitable examples.

Or

4. How is the reader-writer problems solved using a semaphore ? Explain in detail.

Turn over

5. Explain the optimal page replacement policy, FCFS page replacement policy and the Least Recently used page replacement policy with examples.

Or

6. Explain the virtual memory working in detail.

7. Explain the protection and security mechanisms in a file system.

Or

8. Explain about the unix kernel and the microsoft windows NT file system.

(4 × 10 = 40 marks)