

**N 1307**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2004.

Fourth Semester

Information Technology

IF 253 — OPERATING SYSTEMS

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention the number system used to code the Mnemonics.
2. Bring out the features of Fourth generation operating system.
3. Give the basic Structure of Operating System.
4. Specify the most heavily used system calls for file management.
5. State the function of Memory Manager.
6. What are memory pages and segments?
7. Define absolute path name and Relative path name to a file.
8. List the functions of Device Independent I/O Software.
9. How deadlock due to mutual due to mutual exclusion is prevented?
10. What is Non-Preemptive Scheduling?

PART B — (5 × 16 = 80 marks)

11. (i) Describe the various Disk Scheduling algorithms with suitable example. (10)
- (ii) Discuss about the use of File descriptor and Access Control Matrix. (6)

12. (a) (i) Explain the role of assembler in executing assembly language programs in microprocessor. (8)  
(ii) Explain the function of Loader and Linker. (8)

Or

- (b) (i) Explain the job of operating system as resource manager and in extended machine. (10)  
(ii) Explain the system calls used for Directory and File system Management. (6)
13. (a) (i) Explain the layered structure and client server model of operating system. (10)  
(ii) Write about Time Sharing Operating System. (6)

Or

- (b) Discuss about the use of Inter Process Communication Primitives in detail. (16)
14. (a) (i) Explain the multiprogramming with fixed memory partitions with relocation and memory protection. (10)  
(ii) Describe the consequences of Swapping process. (6)

Or

- (b) (i) Compare NRU and LRU page replacement algorithms. (6)  
(ii) Explain the segmentation technique of virtual memory management with the implementation of pure segmentation. (10)
15. (a) List out the criteria for developing a good processor scheduling algorithm. Discuss about Priority scheduling, Guaranteed scheduling, Real time scheduling and Two level scheduling methods. (16)

Or

- (b) (i) Explain how does the deadlock occur and how can it be recovered?(6)  
(ii) Explain the Banker's algorithm for solving deadlock problem. List out the drawbacks of this algorithm. (10)