Reg. No..... (Pages : 2) **L 5536**

Name.....

FOURTH SEMESTER M.C.A. DEGREE EXAMINATION NOVEMBER/DECEMBER 2004

PRINCIPLES OF OPERATING SYSTEM

Time : Three Hours Maximum : 75 Marks

Part A

Answer **all** *questions.*
Each question carries 3 *marks.*

1. What is meant by a batch system ?
2. Distinguish between Parallel systems and Distributed systems.
3. What is a system call ?
4. What is a semaphore ?
5. What is the need for memory management ?
6. Briefly explain segmentation.
7. What is virtual memory ?
8. Explain thrashing.
9. Briefly state processor management functions of OS.
10. What is meant by CPU scheduling ?

(10 × 3 = 30 marks)

Part B

Answer **two** *full questions from each module.*
Each question carries 7½ marks.

MODULE I

11. (a) Describe the storage structure of a computer system. What is meant by storage hierarchy ?
    (b) Describe the features of real-time systems. What is the scheduling policy of a real time system ?
12. (a) Describe the I/O structure of a computer system.
    (b) Explain the basic principles of interprocess communication.
13. (a) Sketch and explain the general system architecture of a computer system.
    (b) Explain the principles of hardware protection.

MODULE II

14. (a) Explain multiple-processor scheduling.
    (b) Explain the classical problem of synchronisation.

Turn over

15. (a) What is a deadlock ? How are deadlocks characterised ? Describe one method for handling a deadlock.

    (b) Explain the need for process synchronisation. Describe the wait and signal mechanism of process synchronisation.

16. (a) Describe the various functions in memory management.

    (b) Distinguish between logical and physical address space.

Module III

17. (a) What is Virtual memory ? Explain page-replacement. Describe a page-replacement algorithm.

    (b) Explain demand paging.

18. (a) Explain demand segmentation.

    (b) What is meant by contiguous allocation ? Explain.

19. (a) Compare segmented and demand-paged memory management.

    (b) Explain the principle of demand segmentation.

[6 × 7½ = 45 marks]