Or

(a) What is Directory Structure ? Explain the single-level directory and two-level directory in detail. **8**

(b) Explain the concept of Tree-structured directories. **4**

13. What is disk scheduling ? Explain the various disk scheduling algorithms with the help of example.

Or

Write short notes on the following :

(a) Network Operating Systems

(b) Distributed Operating Systems

(c) UNIX Operating System. **11**

Subject Code—0422

M.C.A. (Fourth Year) EXAMINATION

(5 Years Integrated Course)

(Batch 2009 Onwards)

OPERATING SYSTEM-II

MCA-404

Time : 3 *Hours*   *Maximum Marks :* 70

Section A

Note : Attempt any *Seven* questions.   **7×5=35**

1. What is Operating System ? Discuss any *three* services which are provided by an operating system.

2. What is Process Control Block ? What are the different states in which a process can be in its life-cycle ?

3. What are Threads ? Discuss the mechanism provided by threads.

4. Differentiate between internal fragmentation and external fragmentation.

5. Write a short note on demand paging.

6. Discuss the concept of thrashing.

7. Discuss the concept of File and File attributes.

8. Differentiate between contiguous memory allocation and non-contiguous memory allocation.

9. Discuss the operations that are to be performed on a directory while considering the particular directory structure.

10. What do you understand by memory management ?

Section B

Note : Attempt all the questions.

11. (a) What is CPU Scheduling ? Compare the FCFS with SJF scheduling with the help of example. **6**

    (b) Is CPU scheduling necessary ? Discuss the different scheduling criteria for comparing scheduling algorithms. **6**

    Or

    (a) Write short note on Critical Section Problem. **6**

    (b) What is Semaphore ? Explain it with example of Producer Consumer Problem. **6**

12. (a) What is Deadlock ? What are necessary conditions an operating system must satisfy for deadlock to occur ? **4**

    (b) What are the different to handle deadlock ? Explain them in detail. **8**