7331/N

J-25/2110

OPERATING SYSTEM

Paper–MS-115

Semester–I

Time allowed : 3 Hours]   [Maximum Marks : 70

Note : Attempt **two** questions each from Section A and Section B carrying **10½** marks each and entire section C is compulsory consisting of **14** short answer type questions of **2** marks each.

SECTION-A

1. Define Operating System. Discuss various types of operating system alongwith their advantages and disadvantages.   10½

2. Define CPU scheduling. Discuss the various CPU scheduling algorithms with the help of suitable examples.   10½

3. Explain various directory structures with their merits and demerits.   10½

4. Define Deadlock. Discuss the various methods of handling deadlock.   10½

SECTION-B

5. (a) Explain the use of Access matrix in Protection.

    (b) Discuss the concept of cryptography.   10½

6. What do you mean by Demand Paging? How it is implemented? Discuss in detail.   10½

7. Explain FCFS, SSTF and SCAN Disk-Scheduling algorithms with examples.   10½

8. Discuss the various methods of managing Contiguous Memory Management.   10½

SECTION-C

9. Attempt the following :   2×14=28

    (i) What do you mean by Critical Section problem?

(ii) Discuss the advantages of virtual memory.

(iii) What do you mean by Context Switching?

(iv) What is the information stored in Process Control Block (PCB)?

(v) List the various characteristics of a deadlock.

(vi) What are the different scheduling criteria?

(vii) What is the difference between CPU and I/O burst?

(viii) Draw the Process State Transitions Diagram.

(ix) What is the difference between c-scan and c-look algorithms?

(x) How is free disk space managed?

(xi) What is the need of page replacement?

(xii) What do you mean by page fault?

(xiii) Distinguish between linked and indexed file allocation techniques.

(xiv) What are the advantages and disadvantages of Contiguous File Allocation?