

Roll No.

Total Pages : 03

BT-4/M-24

44153

OPERATING SYSTEMS

PC-CS-206-A

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (i) Write a short note on various types of operating systems and also give one example of each type: **10**
 - a) Multiprogramming OS
 - b) Multitasking OS
 - c) Real Time Os
- (ii) Define Operating system. List different services provided by Operating System. **5**
2. (i) Explain various protection in operating system. **7.5**
- (ii) Explain simple and layered structure of operating system in detail. **7.5**

Unit II

3. What do you mean by CPU scheduling? Differentiate preemptive and non-preemptive scheduling with suitable examples. **15**
4. (i) Define a process. Explain various states of a process with suitable diagram. **10**
(ii) What is critical section problem? **5**

Unit III

5. Define Deadlock. Explain algorithm for deadlock avoidance. Consider a computer has six tape drive, with n processes competing for them. Each process may need two drives. What is the maximum value of n for the system to be deadlock free. Also list conditions that lead to deadlock. **15**
6. Define Paging. Explain FIFO page replacement policy. Consider page reference string 1,3,0,3,5,6,3 and 3 page frames. Find the number of page faults. **8**

Unit IV

7. (a) Define disk scheduling. Explain C-SCAN algorithm for disk scheduling with suitable example. **15**

8. Explain the following terms in detail: **15**

- i) Polling
- ii) DMA
- iii) Interrupts