

Roll No.

Total Pages : 3

44153

BT-4/J-25

OPERATING SYSTEMS

Paper : PC-CS-206A

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each unit.

UNIT-I

1. (i) Distinguish among following terminologies : 10
 - (a) Multiprogramming systems
 - (b) Multitasking Systems
 - (c) Multiprocessor systems.
- (ii) Define Operating System. List different services provided by Operating System. 5
2. (i) What are system calls? Explain different categories of system calls with example? 5
- (ii) Write a brief note on different operating system structures. 10

UNIT-II

3. (i) Explain in detail the following CPU scheduling algorithms : 10
(a) FCFS.
(b) Round Robin.
- (ii) Discuss CPU/IO burst cycle. 5
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 the term deadlock. Explain various necessary conditions for a deadlock to occur. Describe resource allocation graph with a deadlock, with a cycle but no deadlock. 15
6. What is the need of Page replacement? Consider the following reference string 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1. Find the number of Page Faults with FIFO, Optimal Page replacement and LRU with four free frames which are empty initially. Which algorithm gives the minimum number of page faults? 15

UNIT-IV

7. Define Disk Scheduling. Explain FCFS and SSTF algorithm for disk scheduling with suitable example. 15

8. Explain following terms in detail :

(i) Polling.

(ii) DMA.

(iii) Interrupts.

15

