

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)

Chromepet, Chennai - 600 044.

B.Sc.Comp Sci - END SEMESTER EXAMINATIONS APRIL - 2024

SEMESTER - V

20UCSCT5006 - Operating Systems

Total Duration : 2 Hrs. 30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Explain the procedure for implementing Interprocess Communication.
2. Classify the features of Internal and External Fragmentation.
3. Relate the concept of thrashing with the performance of memory.
4. Show the various methods for monitoring and managing free space within a file system.
5. Prepare a short note on the working of semaphores.
6. Sketch and discuss about the structure of a page table.
7. Compute page faults using FIFO and LRU page replacement algorithms for the following page-reference string: 4, 7, 6, 1, 7, 6, 1, 2, 7, 2 by considering frames as 3.
8. Justify the significance of addressing security problems via threats.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. List the various CPU scheduling criteria and describe any three CPU Scheduling Algorithms in detail.
10. Define: Deadlock and its characteristics. Apply Banker's algorithm for deadlock avoidance.
11. Recommend: "Segmentation as an example for non-contiguous memory allocation method".
12. Apply Demand Paging as a Virtual Memory Technique to handle memory issues.
13. Discuss on the different directory structures used in the file system and conclude which one is the best among them.
