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.(CGS) END SEMESTER EXAMINATIONS NOVEMBER -2023
SEMESTER - I
21UCGCT1001 - Operating System

Total Duration : 2 Hrs 30 Mins.   Total Marks : 60

Section B

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

1. Mention the purpose of an Operating System and Sketch the different components of a computer system.

2. Enlist the various Operating System services in detail.

3. Illustrate the concept of Multicore programming.

4. Write a detailed note on Mutex locks.

5. Discuss the process of contiguous memory allocation.

6. Describe the segmentation mechanism in detail.

7. Interpret the concept of Demand paging.

8. Examine the different operations performed in the file system.

Section C

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

9. Explain different types of System calls in detail.

10. Explain various scheduling Algorithms.

11. Consider the following snapshot of a system:

Allocation	Max
ABCD	ABCD
P0 3014	5117
P1 2210	3211
P2 3121	3321
P3 0510	4612
P4 4212	6325

    Using the banker's algorithm, determine whether or not each of the following states is unsafe. If the state is safe, illustrate the order in which the processes may be completed. Otherwise, illustrate why the state is unsafe.

    a. Available = (0, 3, 0, 1)
    b. Available = (1, 0, 0, 2)

Contd...

12. Prepare the procedural steps for LRU Page Replacement algorithm with a proper diagram.

13. Describe common methods by which programs cause security breaches.

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