

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.C.A - END SEMESTER EXAMINATIONS - NOV'2024

SEMESTER - V

23UACT5009 - Operating Systems

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

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

1. Classify various different types of operating systems with examples.
2. Describe dynamic loading and linking. How do they improve memory utilization?
3. Explain the concept of demand paging in virtual memory.
4. Explain the purpose of file organization in file systems.
5. What are the four necessary conditions for deadlock? Provide examples to illustrate each condition.
6. Analyze the swapping process in operating systems.
Discuss its benefits and challenges.
7. Discuss the importance of the access matrix in implementing access controls.
8. Examine sequential and random file access methods in detail. Provide example.

Section C

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

9. Differentiate between Preemptive and Non-Preemptive Scheduling with examples.
10. Explain how the Banker's Algorithm is used for deadlock avoidance.
Illustrate with an example.
11. Infer the trade-offs between contiguous and non-contiguous memory allocation methods.
12. Assess the differences between LRU and FIFO page replacement algorithms.
13. Evaluate different disk scheduling algorithms on system performance.
