**APRIL 2026** **52508/325C5A/ 320C5A**

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. What are the main goals of an Operating System?
2. What is CPU scheduling?
3. Mention any two types of Operating Systems.
4. Define the term 'monitor' in synchronization.
5. What is the critical section problem?
6. What is meant by address binding?
7. Define segmentation.
8. What is page fault?
9. What is file access method?
10. What is access matrix?
11. What is the use of application I/O interface?
12. Mention the types of system threats.

PART B — (5 × 5 = 25 marks)

Answer any FIVE questions.

13. Differentiate between user view and system view of an OS.

14. Explain the role of semaphores in synchronization.

15. Describe the methods to detect and recover from deadlocks.

16. Write short notes on dynamic linking and loading.

17. Explain page replacement algorithms with examples.

18. Describe file system structures.

19. Explain encryption and its role in operating system security.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

20. Explain the types of system calls and their role.

21. Describe deadlock characterization and prevention methods.

22. Explain virtual memory management with demand paging.

23. Describe allocation methods and directory structures in file management.

24. Discuss kernel I/O subsystem and how I/O requests are transformed to hardware operations.

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