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SDCCA203

NEW HORIZON COLLEGE LIBRARY KASTURINAGAR BANGALORE-43

II Semester B.C.A./B.C.A.(DS) Degree Examination, June / July - 2026
(SEP Scheme Freshers+Repeaters)
COMPUTER APPLICATIONS
Operating System Concepts

Time : 3 Hours **Maximum Marks : 80**

Instructions :

Answer All the Sections.

SECTION - A

I. Answer any Ten questions. Each question carries 2 marks. (10×2=20)

1. Define Operating System. Give two popular Operating System examples.
2. What is thread? Give specific example.
3. Mention any two differences between Single User and Multi User Operating System.
4. What is scheduling? Specifically mention two uses of it.
5. Define Dead Lock. Mention any one situation to prevent it.
6. What is Critical Section Region in Operating System? Give one example.
7. Mention any two differences among Fixed Size Partition and Dynamic Partition.
8. What is Memory Management? Give one event to specify it.
9. What is Fragmentation? Specify one use of it.
10. What are the various attributes of File?
11. Define Page Replacement Algorithm.
12. Define Semaphore.

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SECTION - B

II. Answer any Six questions. Each question carries 5 marks. (6×5=30)

13. Explain the various services rendered by Operating System in detail.

14. Explain process life cycle in Operating System with a neat diagram.

15. Describe resource allocation graph in Operating System with a neat diagram.

16. What is Paging in Memory? Explain various techniques in Optimal use of Paging.

17. What is Scheduling? Explain any three Scheduling Algorithms in detail.

18. What is Dead Lock? Explain various techniques to prevent them.

19. Write detailed note on Thrashing with example.

20. What are challenges of implementing Page Replacement Algorithms?

SECTION - C

III. Answer any Three questions. Each question carries 10 marks. (3×10=30)

21. a) Explain any three operating system and mention its advantages and disadvantages. **(5)**

    b) Explain Multi-threading in Operating System. **(5)**

22. a) Write detailed elaborative content on External Fragmentation and how its useful. **(5)**

    b) Explain the detailed concept of how segmentation is built in Operating System. **(5)**

23. Consider the following set of CPU process with approximate CPU burst time in micro seconds.

Process Tags	CPU Burst Time
P1	6
P2	11
P3	7
P4	4

Draw feasible Gantt chart illustrating the execution of FCFS and SJF Algorithms and estimate final average waiting time and turnaround time. **(10)**

24. a) What is file protection? Explain all possible techniques to explore to prevent un authorized access. **(5)**

b) Write detailed discussion on various techniques of File Access and Directory Structure. **(5)**