TB243987W

Reg. No :.....

Name :.....

BACHELOR'S DEGREE (C.B.C.S) EXAMINATION, NOVEMBER 2024

2023 ADMISSIONS REGULAR

SEMESTER III - CORE COURSE COMPUTER APPLICATIONS

CA3C06B23 - Operating Systems

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

Part A

I. Answer any Ten questions. Each question carries 2 marks **(10x2=20)**

1. Define swapping.
2. List the services provided by an Operating System?
3. What are the advantages of distributed systems?
4. Define degree of multiprogramming?
5. Discuss the difference between symmetric and asymmetric multiprocessing
6. Define Turnaround Time.
7. What is monitor?
8. Explain how to prevent Hold and Wait condition in deadlock.
9. What do you mean by locality of reference?
10. Define virtual memory.
11. What are the various file operations?
12. Differentiate between absolute path and relative path.

Part B

II. Answer any Six questions. Each question carries 5 marks **(6x5=30)**

13. Explain the different categories of System Programs
14. What do you mean by buffering? Explain the different types
15. Discuss the structure of a PCB
16. Explain the use of wait for graph in Deadlock Detection.
17. How can a deadlock be detected? Explain
18. Discuss LRU-Approximation page Replacement.
19. What is a page fault? Briefly explain the steps for servicing a page fault
20. Explain consistency semantics
21. Discuss about acyclic graph directories

Part C

III. Answer any Two questions. Each question carries 15 marks **(2x15=30)**

22. Explain the FCFS, preemptive and non-preemptive versions of Shortest-Job First and Round Robin (time slice = 2) scheduling algorithms with Gantt charts for the four Processes given. Compare their average turnaround and waiting time.

Process	Arrival Time	Burst Time
P1	0	8
P2	1	4
P3	2	9
P4	3	5

23. Explain how Banker's algorithm is effective in avoiding a deadlock with a suitable example
24. Write about the techniques for structuring the page table.
25. What are files and explain the attributes, operations and access methods for files?