

FREQUENTLY ASKED QUESTIONS IN EXAMINATION.

1. **What is an Operating System? Give the view of the OS as Resource Manager.**
2. Explain different types of OS.
3. Give the view of the OS as User Interface.
4. What is a system call? Explain the types of system call..
5. Write different operating system services.
6. What is spooling?
7. Explain the structure of the operating system.
8. What is kernel? Explain types of kernel.
9. What is Process? Give the difference between a process and a program.
10. **Explain the Process State transition diagram.**
11. **Explain Process Control Block (PCB)?**
12. Difference between process and thread.
13. What is a scheduler? Explain queuing diagram representation of process scheduler with figure.
14. **What is thread? Explain thread structure.**
15. Explain process creation and process termination.
16. Explain types of thread.
17. **Explain IPC Problem –Dining Philosopher Problem.**
18. **Explain IPC Problem – Readers & Writers Problem.**
19. **What is the critical section? What is Mutual exclusion? Explain Peterson"s solution for the mutual exclusion problem.**
20. **Define: Critical Section, Race Condition.**
21. What is a monitor? Give the implementation of Bounded Buffer Producer Consumer Problem using monitor.
22. What is Semaphore? Give the implementation of Readers-Writers Problem using Semaphore.
23. Write short note: Mutual Exclusion
24. Discuss Peterson"s solution for the race condition with an algorithm.
25. **For the Page Reference String: 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0. 1. 7, 0, 1 Calculate the Page Faults applying (i)Optimal(ii)LRU and(iii)FIFO Page Replacement Algorithms for a Memory with three frames.**
26. **Explain the various page replacement strategies.**
27. **Consider the following page reference string: 1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, How many page faults would occur for the following replacement algorithms, assuming four frames? Remember all frames are initially empty, so your first unique pages will all cost one fault each.LRU replacement, FIFO replacement.**
28. Explain the following allocation algorithms: 1) First-fit 2) Best-fit 3) Worst-fit.
29. **Given memory partitions of 100K, 500K, 200K, 300K, and 600K (in order), how would each of the First-fit, Best-fit, and Worst-fit algorithms place processes of 212K, 417K, 112K, and 426K (in order)? Which algorithm makes the most efficient use of memory?**

Solution:

First-Fit:

212K is put in 500K partition.

417K is put in 600K partition.

112K is put in 288K partition (new partition $288K = 500K - 212K$).
426K must wait.

Best-Fit:

212K is put in 300K partition.
417K is put in 500K partition.
112K is put in 200K partition.
426K is put in 600K partition.

Worst-Fit:

212K is put in 600K partition.
417K is put in 500K partition.
112K is put in 388K partition.
426K must wait. In this example,
Best-Fit turns out to be the best.