

Important topics:

Explain Operating System in layman terms

Types of OS - Batch OS, Multiprogramming OS, Multitasking OS, Time Sharing OS, Distributed OS, Real Time OS

RAM vs ROM + Types (Asked in DE Shaw)

Virtualization vs Containerization (OR Virtual machine vs Docker)

Program vs Process (Asked in DE Shaw)

Process vs Thread

User-level thread vs kernel level thread

Differences between multi-threading, multi-processing, multiprogramming, multi-tasking

Microservices based architecture

Process scheduling - Basic terminology like scheduling queue, different times in process like arrival time, Completion Time, Burst Time, Turn Around Time, Waiting Time (WT)

Different process scheduling algorithms - FCFS, SJF, SRTF etc.

Different criterias used - CPU utilization, throughput, response time etc.

Explain how does a process gets executed inside memory (Asked in DE Shaw)

Optimal number of threads for a process

Preemptive vs Non-preemptive scheduling

Some important terms associated with scheduling algorithms - Problem of Ageing, Starvation, Deadlock [should know basic definitions at least]

Synchronization - Semaphores, mutex vs counting semaphore, critical section problem + their three conditions (Mutual exclusion, Progress, Bounded waiting)

Deadlock : Basic definition, Necessary conditions, handling techniques

Memory Management [Very IMP]: Primary vs Secondary Memory, memory Allocation while running a process [IMP], Paging and segmentation (Basics should be clear)

Thrashing [IMP concept]

What is Cache and why is it used?

Memory Partitioning

What is Virtual memory and why?

LRU Cache implementation

Also, practice standard interview questions from:

Interview questions:

<https://www.geeksforgeeks.org/commonly-asked-operating-systems-interview-questions-set-1/>

<https://www.interviewbit.com/operating-system-interview-questions/>

Other questions for practice: <https://www.javatpoint.com/operating-system-interview-questions>

Revision:

<https://www.geeksforgeeks.org/last-minute-notes-operating-systems/>

Book (if enough time):

Operating System Principles by Galvin: <https://amzn.to/2UuxwEJ>