https://www.youtube.com/DebugWithShubham

https://instagram.com/debugwithshubham

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Cognizant GenC 2025

TOP- 15
Operating System

Interview
Question

With

Answers

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Q1. What is Operating System?

Operating System is a system software that works as an interface between user and hardware. It manages:

- CPU
- Memory
- Processes
- Files

Example: Windows, Linux, MacOS, Android

Q2. What is Process & Thread?

Process: A program in execution.

Thread: A lightweight process inside a process.

Process	Thread
Heavyweight	Lightweight
Own memory	Shares memory

Q3. What is Multithreading?

Multithreading allows multiple threads to run parallel within a single process to improve performance.

Q4. What is Scheduling? Why do we need it?

CPU scheduling decides which process will run next to use CPU efficiently.

Q5. Types of Scheduling Algorithms.

- FCFS
- SJF
- Priority
- Round Robin

Follow-up asked:
Which is best for time-sharing system?
- Round Robin

Q6. What is Deadlock?

Deadlock occurs when two or more processes are waiting for resources and none of them can continue.

Deadlock conditions (mention any one):

- Mutual Exclusion

- Hold and Wait

- No Preemption

- Circular Wait

Even if you tell 2, it's enough

Q7. What is Memory Management?

Memory management ensures efficient allocation and usage of RAM while running programs.

Q8. What is Virtual Memory?

Virtual memory allows a system to run big programs using hard disk as extension of RAM.

Q9. What is Paging?

Paging divides memory into fixed-size blocks called:

- **Frames** (Physical memory)

- **Pages** (Logical memory)

Helps avoid memory fragmentation.

Q10. What is Fragmentation?

Internal Fragmentation:

- Wasted space inside allocated memory.

External Fragmentation:

- Free memory exists but not continuous.

Q11. What is File System?

File system helps OS store, organize, and manage files.

Example:
    NTFS, FAT32, ext4

Q12. What is Context Switching?

Context switching means switching CPU from one process to another by saving current state.

Q13. Difference Between Primary & Secondary Memory

Primary (RAM)	Secondary (HDD/SSD)
Fast	Slow
Volatile	Non-Volatile

Q14. What is Semaphore?

Semaphore is a synchronization tool used to handle process coordination and avoid race conditions.

15. What is Kernel?

Kernel is the core part of OS that controls:

    -CPU

    -Memory

    -Devices