**MUST-DO Questions for Interviews**

**(DBMS, CN and OS)**

(Sheet for the sole purpose of quick revision and preparation in less time)  
  
**Previous Sheets:**

SDE sheet(Over 500+ success stories): https://www.youtube.com/watch?v=WNtzUR\_MwUQ&t=6s   
  
CR Sheet:

https://www.youtube.com/watch?v=qahaODNyI3M&t=2s   
  
CP Sheet:   
(used by most of the competitive programmers to practice and get practice problems)

https://www.youtube.com/watch?v=QtTPohzfxA8&t=92s

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**Channel 1: https://www.youtube.com/channel/UCJskGeByzRRSvmOyZOz61ig**

**Channel 2: https://www.youtube.com/channel/UCvEKHATlVq84hm1jduTYm8g**

Why trust this sheet ?

Ans: Candidate Master, 6\*, Currently working with Media.net (Directi), ex Intern at Amazon India. Major success with the previous sheets, and more importantly trusted by his “TAKEUFORWARD FAM”

**Operating System**:

• What is the main purpose of an operating system? Discuss different types?

• What is a socket, kernel and monolithic kernel ?

• Difference between process and program and thread? Different types of process.

• Define virtual memory, thrashing, threads.

• What is RAID ? Different types.

• What is a deadlock ? Different conditions to achieve a deadlock.

• What is fragmentation? Types of fragmentation.

• What is spooling ?

• What is semaphore and mutex (Differences might be asked)? Define Binary semaphore.

• Belady’s Anomaly

• Starving and Aging in OS

• Why does trashing occur?

• What is paging and why do we need it?

• Demand Paging, Segmentation

• Real Time Operating System, types of RTOS.

• Difference between main memory and secondary memory.

• Dynamic Binding

• FCFS Scheduling

• SJF Scheduling

• SRTF Scheduling

• LRTF Scheduling

• Priority Scheduling

• Round Robin Scheduling

• Producer Consumer Problem

• Banker’s Algorithm

• Explain Cache

• Diff between direct mapping and associative mapping

• Diff between multitasking and multiprocessing

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DBMS:

• What is DBMS ? Mention advantages..

• What is Database?

• What is a database system?

• What is RDBMS ? Properties..

• Types of database languages

• ACID properties (VVVVV IMP)

• Difference between vertical and horizontal scaling

• What is sharding

• Keys in DBMS

• Types of relationship

• Data abstraction in DBMS, three levels of it

• Indexing in DBMS

• What is DDL (Data Definition Language)

• What is DML (Data Manipulation Language)

• What is normalization ? Types of them ..

• What is denormalization ?

• What is functional dependency ?

• E-R Model ?

• Conflict Serializability in DBMS ..

• Explain Normal forms in DBMS

• What is CCP ? (Concurrency Control Protocols)

• Entity, Entity Type, Entity Set, Weak Entity Set..

• What are SQL commands ? Types of them..

• Nested Queries in SQL ?

• What is JOIN .. Explain types of JOINs

• Inner and Outer Join

• Practice sql queries from leetcode

• Diff between 2 tier and 3 tier architecture

• Diff between TRUNCATE and DELETE command ..

• Difference between Intension and Extension in a DataBase

• Difference between share lock and exclusive lock, definition of lock

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Compute Networks:

• Define network

• What do you mean by network topology, and explain types of them

• Define bandwidth, node and link ?

• Explain TCP model ..

• Layers of OSI model

• Significance of Data Link Layer

• Define gateway, difference between gateway and router ..

• What does ping command do ?

• What is DNS, DNS forwarder, NIC, ?

• What is MAC address ?

• What is IP address, private IP address, public IP address, APIPA ?

• Difference between IPv4 and IPv6

• What is subnet ?

• Firewalls

• Different type of delays

• 3 way handshaking

• Server-side load balancer

• RSA Algorithm

• What is HTTP and HTTPS protocol ?

• What is SMTP protocol ?

• TCP and UDP protocol, prepare differences

• What happens when you enter “google.com” (very very famous question)

• Hub vs Switch

• VPN, advantages and disadvantages of it

• LAN