

# Operating System:

1. What is the main purpose of an operating system? Discuss different types?
2. What is a socket, kernel and monolithic kernel ?
3. Difference between process and program and thread? Different types of process.
4. Define virtual memory, thrashing, threads.
5. What is RAID ? Different types.
6. What is a deadlock ? Different conditions to achieve a deadlock.
7. What is fragmentation? Types of fragmentation.
8. What is spooling ?
9. What is semaphore and mutex (Differences might be asked)? Define Binary semaphore.
10. Belady's Anomaly
11. Starving and Aging in OS
12. Why does trashing occur?
13. What is paging and why do we need it?
14. Demand Paging, Segmentation
15. Real Time Operating System, types of RTOS.
16. Difference between main memory and secondary memory.
17. Dynamic Binding
18. FCFS Scheduling
19. SJF Scheduling
20. SRTF Scheduling
21. LRTF Scheduling
22. Priority Scheduling
23. Round Robin Scheduling
24. Producer Consumer Problem
25. Banker's Algorithm
26. Explain Cache
27. Diff between direct mapping and associative mapping
28. Diff between multitasking and multiprocessing

# DBMS:

1. What is DBMS ? Mention advantages..
2. What is Database?
3. What is a database system?
4. What is RDBMS ? Properties..
5. Types of database languages
6. ACID properties (VVVVV IMP)
7. Difference between vertical and horizontal scaling
8. What is sharding
9. Keys in DBMS
10. Types of relationship
11. Data abstraction in DBMS, three levels of it
12. Indexing in DBMS
13. What is DDL (Data Definition Language)
14. What is DML (Data Manipulation Language)
15. What is normalization ? Types of them ..
16. What is denormalization ?
17. What is functional dependency ?
18. E-R Model ?
19. Conflict Serializability in DBMS ..
20. Explain Normal forms in DBMS
21. What is CCP ? (Concurrency Control Protocols)
22. Entity, Entity Type, Entity Set, Weak Entity Set..
23. What are SQL commands ? Types of them..
24. Nested Queries in SQL ?
25. What is JOIN .. Explain types of JOINS
26. Inner and Outer Join
27. Practice sql queries from leetcode
28. Diff between 2 tier and 3 tier architecture
29. Diff between TRUNCATE and DELETE command ..
30. Difference between Intension and Extension in a DataBase
31. Difference between share lock and exclusive lock, definition of lock

# Compute Networks:

1. Define network
2. What do you mean by network topology, and explain types of them
3. Define bandwidth, node and link ?
4. Explain TCP model ..
5. Layers of OSI model
6. Significance of Data Link Layer
7. Define gateway, difference between gateway and router ..
8. What does ping command do ?
9. What is DNS, DNS forwarder, NIC, ?
10. What is MAC address ?
11. What is IP address, private IP address, public IP address, APIPA ?
12. Difference between IPv4 and IPv6
13. What is subnet ?
14. Firewalls
15. Different type of delays
16. 3 way handshaking
17. Server-side load balancer
18. RSA Algorithm
19. What is HTTP and HTTPS protocol ?
20. What is SMTP protocol ?
21. TCP and UDP protocol, prepare differences
22. What happens when you enter "google.com" (very very famous question)
23. Hub vs Switch
24. VPN, advantages and disadvantages of it
25. LAN