MUST-DO Questions for Interviews (DBMS, CN, OS, and OOPs)

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
32. Difference between Primary key and Unique key
33. Constraints of sql/dbms
34. ER and Relational Model fully

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

OOPs (Object Oriented Programming) :

1. What is Object Oriented Programming (OOPs)?
2. Why OOPs?
3. What is a Class?
4. What is an Object?
5. What are the main features of OOPs?
6. What is Encapsulation?
7. What is Abstraction?
8. What is Polymorphism?
9. What is Inheritance? What is its purpose?
10. What are access specifiers? What is their significance in OOPs?
11. What are the advantages and disadvantages of OOPs?
12. What other paradigms of programming exist besides OOPs?
13. What is the difference between Structured Programming and Object-Oriented Programming?
14. What are some commonly used object-oriented programming Languages?
15. What are the different types of Polymorphism?
16. What is the difference between overloading and overriding?
17. Are there any limitations on Inheritance?

18. What different types of Inheritance are there?
19. What is an interface?
20. How is an abstract class different from an interface?
21. How much memory does a class occupy?
22. Is it always necessary to create objects from class?
23. What is the difference between a structure and a class in C++?
24. What is Constructor?
25. What are the various types of constructors in C++?
26. What is a destructor?
27. Can we overload the constructor in a class?
28. Can we overload the destructor in a class?
29. What is the virtual function?
30. What is pure virtual function?
31. 4 Piller with real life example
32. Why java doesn't support multiple inheritance
33. __init__ and super () in python
34. final, finalize, finale keyword in java
35. Why python doesn't support method overloading?
36.

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
29. Process state