

SQL basic questions



sql basic questions

Sure! Here are some **basic SQL interview questions with short, clear answers**:

✓ 1. What is SQL?

SQL (Structured Query Language) is used to store, retrieve, and manage data in relational databases.

✓ 2. What is a Database?

A **database** is an organized collection of data stored electronically.

✓ 3. What is a Table?

A **table** is a set of rows and columns that stores related data.

✓ 4. What is a Primary Key?

A **Primary Key** uniquely identifies each row in a table.

- Cannot be NULL
- Must be unique

✓ 5. What is a Foreign Key?

A **Foreign Key** links two tables together.

- References Primary Key of another table
- Maintains relationships

✓ 6. What is the difference between WHERE and HAVING?

WHERE	HAVING
Filters rows before GROUP BY	Filters groups after GROUP BY

✓ 7. What is JOIN? Types?

JOIN combines data from multiple tables.

Types:

- INNER JOIN
- LEFT JOIN
- RIGHT JOIN
- FULL JOIN

✓ 8. What is the difference between DELETE, TRUNCATE, DROP?

Command	What it does
DELETE	Deletes selected rows
TRUNCATE	Deletes all rows (faster)
DROP	Deletes table structure

✓ 9. What is normalization?

Process of organizing data to remove **redundancy** and improve **efficiency**.

✓ 10. What are constraints?

Rules applied on columns.

Examples:

- NOT NULL
- UNIQUE
- PRIMARY KEY
- FOREIGN KEY
- CHECK
- DEFAULT

✓ 11. What is ORDER BY?

Used to **sort** data (ASC/DESC).

✓ 12. What is GROUP BY?

Groups rows with same values and is used with aggregate functions.

✓ 13. What are Aggregate Functions?

Functions that perform calculations on data:

- COUNT()
- SUM()
- AVG()
- MAX()
- MIN()

✓ 14. What is DISTINCT?

Used to remove duplicate values.

✓ 15. What is an Index?

Improves query performance (faster searching).

✓ 16. What is a View?

A **virtual table** based on result of a SELECT query.

✓ 17. What is a Subquery?

A query inside another query.

✓ 18. What is DDL, DML, DCL, TCL?

- **DDL** (CREATE, ALTER, DROP)
- **DML** (INSERT, UPDATE, DELETE)
- **DCL** (GRANT, REVOKE)
- **TCL** (COMMIT, ROLLBACK, SAVEPOINT)

✓ 19. What is BETWEEN, IN, LIKE?

Used in WHERE clause:

- BETWEEN → range
- IN → multiple values

- LIKE → pattern matching
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✓ 20. What is NULL?

Represents **unknown or missing** value.

If you want, I can also give **practical query examples, tricky interview questions, or MCQs with answers.**

Do you want theory only or with query examples?



aur btaow

Sure! Aur **important / thode depth wale basic-to-intermediate SQL questions** batata hoon jo interview me bahut aate hain

✓ 21. What is the difference between CHAR and VARCHAR?

CHAR	VARCHAR
Fixed length	Variable length
Faster	Saves memory
Example: CHAR(10) always 10 chars	VARCHAR(10) up to 10 chars

✓ 22. What is AUTO_INCREMENT?

Automatically increases value (mostly used in **Primary Key**).

✓ 23. What is DEFAULT constraint?

If no value is given, assign a default value.

✓ 24. Can a table have multiple PRIMARY KEY?

No

But it can have **Composite Primary Key** (multiple columns combined to make unique)

✓ 25. What is UNIQUE constraint?

Makes sure all values in a column are different.

- Allows 1 NULL (depends on DB)
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✓ 26. What is the difference between UNION and UNION ALL?

UNION	UNION ALL
Removes duplicates	Keeps duplicates
Slower	Faster

✓ 27. What is Self Join?

Joining table with itself.

✓ 28. What is an Alias?

Temporary name for column/table using `AS`.

✓ 29. What is a Stored Procedure?

Saved SQL code that can be executed with parameters.

✓ 30. What is a Trigger?

SQL code that runs **automatically** when INSERT/UPDATE/DELETE happens.

✓ 31. What is a Cursor?

Used to **fetch rows one by one** (like a loop in SQL).

✓ 32. What is ACID in transactions?

Guarantees data reliability:

- Atomicity (all or nothing)
 - Consistency (valid state)
 - Isolation (transactions don't affect each other)
 - Durability (permanent)
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✓ 33. What is the difference between COUNT(*) and COUNT(column)?

- COUNT(*) → Counts all rows
 - COUNT(column) → Counts NON-NUL rows
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✓ 34. What is COALESCE?

Returns the **first non-null** value.

```
sql
SELECT COALESCE(middle_name, 'N/A') FROM students;
```

✓ 35. What is CHECK constraint?

Restricts column to specific rule:

```
sql
age INT CHECK(age >= 18)
```

✓ 36. What is CASE (if-else in SQL)?

```
sql
SELECT
    name,
    salary,
    CASE
        WHEN salary > 50000 THEN 'High'
        ELSE 'Low'
    END AS salary_level
FROM employees;
```

✓ 37. Difference: INNER JOIN vs OUTER JOIN?

- INNER → Only matching records
 - LEFT → All from left table + matching from right
 - RIGHT → All from right + matching from left
 - FULL → All records from both
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✓ 38. What is normalization? (Levels)

- 1NF → No repeating groups
- 2NF → No partial dependency
- 3NF → No transitive dependency

✓ 39. What is denormalization?

Opposite of normalization → Add redundancy for **faster reads**.

✓ 40. What is the difference between Clustered and Non-Clustered Index?

Clustered	Non-Clustered
Sorts actual data	Creates separate index
One per table	Many allowed
Faster read	Slightly slower

✓ Chahiye to **Advanced SQL Questions, Tricky JOIN questions, Real-world query examples**, ya **Practice problems with answers** bhi de saka hoon!

👉 Batao next kya chahiye?

- ✓ Advanced questions
- ✓ Practice query examples
- ✓ MCQ type
- ✓ Scenario-based (real project type)



aur dedo

Bilkul! Ab aur **important + thoda advanced level SQL interview questions** de raha hoon jo company interviews me bahut puchhe jaate hain 👉

✓ 41. What is a Composite Key?

Primary Key made of **2 or more columns**.

Example:

(student_id + course_id) together make unique record.

✓ 42. Can a Foreign Key be NULL or Duplicate?

- ✓ Duplicate allowed
- ✓ NULL allowed
- 👉 Because it's not responsible for uniqueness.

✓ 43. What is ON DELETE CASCADE?

If parent record is deleted → related child records are **automatically deleted**.

✓ 44. What is ON UPDATE CASCADE?

If parent key value changes → child records are **updated automatically**.

✓ 45. What is Difference between “=” and “LIKE”?

- = → Exact match
- LIKE → Pattern match (%,_)

✓ 46. What is the use of LIMIT / TOP / ROWNUM?

Fetch **limited number of rows**.

✓ 47. What is EXISTS?

Checks whether **subquery returns at least one row**.

Faster than IN in many cases.

✓ 48. What is ANY and ALL?

- ANY → true if **any value** matches
- ALL → true if **all values** match

✓ 49. What is the difference between Stored Procedure and Function?

Stored Procedure	Function
Can return 0 or many values	Must return 1 value
Can use DML (INSERT/UPDATE)	Mostly not allowed
Called using EXEC	Used in SELECT

✓ 50. What is View vs Table?

View	Table
Virtual	Physical

View	Table
No data stored	Data stored
Based on SELECT	Independent structure

✓ 51. What is MATERIALIZED VIEW?

View that **stores** the result physically (faster read).

✓ 52. What is Deadlock?

When two transactions block each other permanently.

✓ 53. How to avoid Deadlock?

- Access tables in same order
- Keep transactions short
- Use proper indexing

✓ 54. What is Pagination in SQL?

Using LIMIT + OFFSET (or ROW_NUMBER) to load data page-wise.

✓ 55. What is the difference BETWEEN vs >= AND <=?

BETWEEN 10 AND 20 → 10,11,12...20 (inclusive)

✓ 56. What is NVL / IFNULL / ISNULL?

Replace NULL with another value.

✓ 57. What is RANK() vs DENSE_RANK()?

Example: Scores – 100, 95, 95, 90

Value	RANK	DENSE_RANK
100	1	1
95	2	2
95	2	2
90	4	3

✓ 58. How do you fetch 2nd highest salary?

sql

```
SELECT MAX(salary)
FROM employees
WHERE salary < (SELECT MAX(salary) FROM employees);
```

OR

sql

```
SELECT salary FROM employees
ORDER BY salary DESC
LIMIT 1 OFFSET 1;
```

✓ 59. What is Difference: DELETE with WHERE vs DELETE without WHERE?

- With WHERE → selected rows deleted
- Without WHERE → all rows deleted (same as TRUNCATE but slower)

✓ 60. What is Schema?

Logical layout of database → tables, views, relationships.

✓ Aur chahiye? Ab mai de sakta hoon:

- 👉 Advanced SQL Questions with Real Examples
- 👉 Most Asked 100 SQL Interview Q&A
- 👉 Practice Queries (Solve Yourself)
- 👉 Scenario-based Queries (Real Company level)

Batao konsa chahiye?



ab hmko 1 se lekar 59 tak sara questions pdf mai dedo thik hia