

SQL Questions and Answers (Full Questions)

1. DDL (Data Definition Language)

DDL is used to define or modify the **structure** of the database (schema). These commands are usually auto-committed, meaning they save changes permanently immediately.

- **CREATE:** To create a new table or database.
- **ALTER:** To add, delete, or modify columns in an existing table.
- **DROP:** To delete an entire table or database.
- **TRUNCATE:** To remove all records from a table, but keep the structure.

2. DML (Data Manipulation Language)

DML is used to manage the **data within** the objects. This is what you will use most frequently for day-to-day data tasks.

- **INSERT:** To add new rows of data.
- **UPDATE:** To modify existing data.
- **DELETE:** To remove specific rows.

1. What is the difference between DELETE, TRUNCATE, and DROP?

DELETE: DML command. Removes specific rows using a `WHERE` clause. It can be rolled back.

TRUNCATE: DDL command. Removes all rows from a table, but keeps the structure. It is faster and usually cannot be rolled back.

DROP: DDL command. Completely removes the table and its data from the database.

Query: Add a new record

```
INSERT INTO Employees (EmpID, FirstName, Salary) VALUES (101, 'Arjun', 75000);
```

Query: Update an existing record

```
UPDATE Employees SET Salary = 80000 WHERE EmpID = 101;
```

Query: Delete a specific record

```
DELETE FROM Employees WHERE EmpID = 101;
```

2. What are the different types of Joins?

INNER JOIN: Returns records with matching values in both tables.

LEFT JOIN: Returns all records from the left table and matched records from the right.

RIGHT JOIN: Returns all records from the right table and matched records from the left.

FULL JOIN: Returns all records when there is a match in either table.

INNER JOIN EXAMPLE

Employee Table			Department Table	
empid	name	deptid	deptid	deptname
1	Amit	10	10	HR
2	Rohit	20	20	IT
3	Neha	30	40	Finance
4	Suman	NULL		

SQL QUERY (INNER JOIN)

```
SELECT e.empid, e.name, d.deptname
FROM Employee e
INNER JOIN Department d
ON e.deptid = d.deptid;
```

OUTPUT

```
empid | name | deptname
1 | Amit | HR
2 | Rohit | IT
```

Q. Practical Question

1. SQL Query to update DateOfJoining to 15-jul-2012 for empid =1

2. SQL Query to select all student name where age is greater than 22
3. SQL Query to Find all employee with Salary between 40000 and 80000
4. SQL Query to find name of employee beginning with S
5. SQL Query to display full name
6. Write a query to fetch details of employees whose firstname ends with an alphabet 'A' and contains exactly five alphabets
7. Write a query to fetch details of all employees excluding few Employees
8. SQL query to display the current date
9. SQL Query to get day of last day of the previous month
10. Write an SQL query to fetch the employee FIRST names and replace the A with '@'
11. Write an SQL query to fetch the domain from an email address
12. Write an SQL query to update the employee names by removing leading and trailing spaces
13. Write an SQL query to fetch all the Employees details from Employee table who joined in the Year 2020
14. Write an SQL query to fetch only odd rows / Even rows from the table
15. Write an SQL query to create a new table with data and structure copied from another table
16. Write an SQL query to create an empty table with the same structure as some other table
17. Write an SQL query to fetch top 3 HIGHEST salaries
18. Find the first employee and last employee from employee table
19. List the ways to get the count of records in a table
20. Write a query to fetch the department-wise count of employees sorted by department's count in ascending order
21. Write a query to retrieve Departments who have less than 4 employees working in it
22. Write a query to retrieve Department wise Maximum salary
23. Write a query to Employee earning maximum salary in his department

24. Write an SQL query to fetch the first 50% records from a table
25. Query to fetch details of employees not having computer
26. Query to fetch employee details along with the computer details who have been assigned with a computer
27. Fetch all employee details along with the computer name assigned to them
28. Fetch all Computer Details along with employee name using it
29. Delete duplicate records from a table
30. Find Nth Highest salary

1. SQL Query to update DateOfJoining to 15-jul-2012 for empid = 1

Answer:

```
UPDATE Employee SET DateOfJoining = '2012-07-15' WHERE empid = 1;
```

2. SQL Query to select all student name where age is greater than 22

Answer:

```
SELECT name FROM Student WHERE age > 22;
```

3. SQL Query to Find all employee with Salary between 40000 and 80000

Answer:

```
SELECT * FROM Employee WHERE salary BETWEEN 40000 AND 80000;
```

4. SQL Query to find name of employee beginning with S

Answer:

```
SELECT * FROM Employee WHERE name LIKE 'S%';
```

5. SQL Query to display full name

Answer:

```
SELECT CONCAT(firstname, ' ', lastname) AS fullname FROM Employee;
```

6. Write a query to fetch details of employees whose firstname ends with an alphabet 'A' and contains exactly five alphabets

Answer:

```
SELECT * FROM Employee WHERE firstname LIKE '____A';
```

7. Write a query to fetch details of all employees excluding few Employees

Answer:

```
SELECT * FROM Employee WHERE empid NOT IN (1,2,3);
```

8. SQL query to display the current date

Answer:

```
SELECT CURRENT_DATE;
```

9. SQL Query to get day of last day of the previous month

Answer:

```
SELECT DAY(LAST_DAY(CURRENT_DATE - INTERVAL 1 MONTH));
```

10. Write an SQL query to fetch the employee FIRST names and replace the A with '@'

Answer:

```
SELECT REPLACE(firstname, 'A', '@') FROM Employee;
```

11. Write an SQL query to fetch the domain from an email address

Answer:

```
SELECT SUBSTRING_INDEX(email, '@', -1) FROM Employee;
```

12. Write an SQL query to update the employee names by removing leading and trailing spaces

Answer:

```
UPDATE Employee SET name = TRIM(name);
```

```
UPDATE Employee SET name = LTRIM(RTRIM(name));
```

13. Write an SQL query to fetch all the Employees details from Employee table who joined in the Year 2020

Answer:

```
SELECT * FROM Employee WHERE YEAR(DateOfJoining) = 2020;
```

14. Write an SQL query to fetch only odd rows / Even rows from the table

Answer:

```
SELECT * FROM Employee WHERE MOD(empid,2)=1; -- Odd Rows
```

```
SELECT * FROM Employee WHERE MOD(empid,2)=0; -- Even Rows
```

15. Write an SQL query to create a new table with data and structure copied from another table

Answer:

```
CREATE TABLE emp_copy AS SELECT * FROM Employee;
```

16. Write an SQL query to create an empty table with the same structure as some other table

Answer:

```
CREATE TABLE emp_empty LIKE Employee;
```

17. Write an SQL query to fetch top 3 HIGHEST salaries

Answer:

```
SELECT * FROM Employee ORDER BY salary DESC LIMIT 3;
```

18. Find the first employee and last employee from employee table

Answer:

```
SELECT * FROM Employee ORDER BY empid ASC LIMIT 1;  
SELECT * FROM Employee ORDER BY empid DESC LIMIT 1;
```

19. List the ways to get the count of records in a table

Answer:

```
SELECT COUNT(*) FROM Employee;  
SELECT COUNT(empid) FROM Employee;
```

20. Write a query to fetch the department-wise count of employees sorted by department's count in ascending order

Answer:

```
SELECT department, COUNT(*) AS total FROM Employee GROUP BY department ORDER BY total ASC;
```

21. Write a query to retrieve Departments who have less than 4 employees working in it

Answer:

```
SELECT department FROM Employee GROUP BY department HAVING COUNT(*) < 4;
```

22. Write a query to retrieve Department wise Maximum salary

Answer:

SELECT department, MAX(salary) FROM Employee GROUP BY department;

23. Write a query to Employee earning maximum salary in his department

Answer:

SELECT * FROM Employee e WHERE salary = (SELECT MAX(salary) FROM Employee WHERE department = e.department);

24. Write an SQL query to fetch the first 50% records from a table

Answer:

SELECT * FROM Employee LIMIT (SELECT COUNT(*)/2 FROM Employee);

25. Query to fetch details of employees not having computer

Answer:

SELECT * FROM Employee WHERE empid NOT IN (SELECT empid FROM Computer);

26. Query to fetch employee details along with the computer details who have been assigned with a computer

Answer:

SELECT e.*, c.* FROM Employee e INNER JOIN Computer c ON e.empid = c.empid;

27. Fetch all employee details along with the computer name assigned to them

Answer:

SELECT e.name, c.computer_name FROM Employee e LEFT JOIN Computer c ON e.empid = c.empid;

28. Fetch all Computer Details along with employee name using it

Answer:

SELECT c.*, e.name FROM Computer c LEFT JOIN Employee e ON c.empid = e.empid;

29. Delete duplicate records from a table

Answer:

DELETE e1 FROM Employee e1 JOIN Employee e2 WHERE e1.empid > e2.empid AND e1.email = e2.email;

30. Find Nth Highest salary

Answer:

SELECT DISTINCT salary FROM Employee ORDER BY salary DESC LIMIT N-1,1;