SQL Important Questions with Answers (DDL, DML, DQL)

DDL (Data Definition Language)

Q: What is DDL in SQL?

A: DDL stands for Data Definition Language. It is used to define and modify database objects. It mainly works with structures like tables, schemas, and indexes.

Q: Name the main DDL commands.

A: The primary DDL commands are CREATE, ALTER, DROP, TRUNCATE, and RENAME. They deal with structural changes in the database.

Q: Difference between DROP and TRUNCATE?

A: DROP deletes both table structure and its data permanently. TRUNCATE deletes only the data while keeping the structure intact. TRUNCATE is faster than DELETE.

Q: Write a query to create a table Employee.

A: Example: CREATE TABLE Employee (EmpID INT PRIMARY KEY, Name VARCHAR(50), Salary DECIMAL(10,2)); This command creates a table with columns.

Q: How to modify a column datatype in SQL?

A: We can use ALTER command. Example: ALTER TABLE Employee MODIFY Salary FLOAT; This changes the datatype of Salary column.

Q: How to add a new column to an existing table?

A: ALTER TABLE Employee ADD Department VARCHAR(50); This command adds a new column named Department.

Q: How to rename a table?

A: RENAME TABLE Employee TO Staff; This renames the Employee table to Staff without affecting data.

Q: What is the difference between DELETE and TRUNCATE?

A: DELETE removes rows based on condition (WHERE clause). TRUNCATE removes all rows directly without WHERE. TRUNCATE is faster.

Q: Write a query to drop a table.

A: DROP TABLE Employee; This removes the Employee table and its data completely from the database.

Q: Can TRUNCATE be rolled back?

A: Yes, if used inside a transaction, TRUNCATE can be rolled back in some DBMS. But in some systems like MySQL MyISAM, rollback is not supported.

DML (Data Manipulation Language)

Q: What is DML?

A: DML (Data Manipulation Language) is used to manage data inside tables. It allows inserting, updating, deleting, and merging records.

Q: Name the main DML commands.

A: The common DML commands are INSERT, UPDATE, DELETE, and MERGE. These commands work directly with data stored in tables.

Q: Write a query to insert a record into Employee table.

A: Example: INSERT INTO Employee (EmpID, Name, Salary) VALUES (1, 'Seenu', 50000); This adds a new row.

Q: How to update employee salary to 60000 where EmpID = 1?

A: UPDATE Employee SET Salary = 60000 WHERE EmpID = 1; This changes salary of the given employee.

Q: How to delete employee whose EmpID = 2?

A: DELETE FROM Employee WHERE EmpID = 2; This removes the row matching EmpID 2 from Employee table.

Q: What is the difference between DELETE and DROP?

A: DELETE removes only data but keeps the table structure. DROP removes both structure and data completely.

Q: Write a query to insert multiple rows.

A: INSERT INTO Employee (EmpID, Name, Salary) VALUES (2, 'Sri', 40000), (3, 'Kumar', 45000); This adds multiple rows.

Q: What is MERGE in SQL?

A: MERGE allows inserting, updating, or deleting rows based on conditions from another table. It is also called UPSERT.

Q: Can DELETE remove all rows without WHERE?

A: Yes. Example: DELETE FROM Employee; This will remove all rows but the structure remains intact.

Q: Which is faster: TRUNCATE or DELETE?

A: TRUNCATE is faster since it does not log each row deletion. DELETE is slower as it maintains logs for each deleted row.

DQL (Data Query Language)

Q: What is DQL?

A: DQL (Data Query Language) is used to query the database. It retrieves data using SELECT statements and filters data with conditions.

Q: Write a query to select all employees.

A: Example: SELECT * FROM Employee; This fetches all rows and columns from Employee table.

Q: Write a query to fetch Name and Salary from Employee.

A: SELECT Name, Salary FROM Employee; This retrieves only Name and Salary columns.

Q: Write a query to fetch employees with salary greater than 40000.

A: SELECT * FROM Employee WHERE Salary > 40000; This filters rows with condition.

Q: How to sort employee names in ascending order?

A: SELECT * FROM Employee ORDER BY Name ASC; This sorts the records alphabetically.

Q: Write a query to find max salary.

A: SELECT MAX(Salary) FROM Employee; This returns the maximum salary value.

Q: Write a query to count employees.

A: SELECT COUNT(*) FROM Employee; This gives the total number of rows in Employee table.

Q: How to group employees by Department?

A: SELECT Department, COUNT(*) FROM Employee GROUP BY Department; This groups rows and counts employees by department.

Q: Write a query to fetch employees with name starting with 'S'.

A: SELECT * FROM Employee WHERE Name LIKE 'S%'; This finds employees whose names begin with S.

Q: Write a query to fetch the second highest salary.

A: SELECT MAX(Salary) FROM Employee WHERE Salary < (SELECT MAX(Salary) FROM Employee); This returns the second highest salary.