

# **SQL – Step-by-Step Theory Answers (English)**

## **1. What is SQL and why is it essential in database management?**

- Step 1: SQL stands for Structured Query Language.
- Step 2: It is used to communicate with databases.
- Step 3: It helps store, retrieve, update, and delete data.
- Step 4: It efficiently manages large volumes of data.
- Step 5: It provides data security and consistency.

## **2. Difference between DBMS and RDBMS**

- Step 1: DBMS stores data in files.
- Step 2: RDBMS stores data in tables.
- Step 3: DBMS does not support relationships.
- Step 4: RDBMS supports relationships using keys.

## **3. Role of SQL in managing relational databases**

- Step 1: Creates database structures.
- Step 2: Inserts, updates, and deletes data.
- Step 3: Retrieves required information.
- Step 4: Manages table relationships.
- Step 5: Controls data security.

## **4. Key features of SQL**

- Step 1: Easy to learn.
- Step 2: Platform independent.
- Step 3: High performance.
- Step 4: Secure.
- Step 5: Transaction support.

## **5. Basic components of SQL syntax**

- Step 1: SQL keywords.
- Step 2: Table names.
- Step 3: Column names.

Step 4: Operators.

Step 5: Clauses like WHERE and ORDER BY.

## 6. SQL Constraints

Step 1: Constraints ensure valid data.

Step 2: NOT NULL prevents empty values.

Step 3: UNIQUE avoids duplicates.

Step 4: PRIMARY KEY identifies records.

Step 5: FOREIGN KEY creates relationships.

## 7. DDL Commands

Step 1: DDL defines database structure.

Step 2: CREATE creates tables.

Step 3: ALTER modifies tables.

Step 4: DROP deletes tables.

## 8. DML Commands

Step 1: INSERT adds data.

Step 2: UPDATE modifies data.

Step 3: DELETE removes data.

## 9. DQL Command

Step 1: SELECT retrieves data.

Step 2: WHERE filters data.

Step 3: ORDER BY sorts data.

## 10. DCL Commands

Step 1: GRANT provides permissions.

Step 2: REVOKE removes permissions.

## 11. TCL Commands

Step 1: COMMIT saves changes.

Step 2: ROLLBACK cancels changes.

Step 3: SAVEPOINT allows partial rollback.

## 12. SQL Joins

Step 1: JOIN combines tables.

Step 2: INNER JOIN returns matching records.

Step 3: LEFT JOIN returns all left table records.

Step 4: RIGHT JOIN returns all right table records.

Step 5: FULL JOIN returns all records.

## 13. GROUP BY Clause

Step 1: Groups similar rows.

Step 2: Used with aggregate functions.

Step 3: Differs from ORDER BY.

## 14. Stored Procedure

Step 1: Pre-written SQL code.

Step 2: Stored in database.

Step 3: Improves performance.

## 15. SQL View

Step 1: Virtual table.

Step 2: Based on SELECT query.

Step 3: Enhances security.

## 16. SQL Triggers

Step 1: Automatic execution.

Step 2: INSERT trigger.

Step 3: UPDATE trigger.

Step 4: DELETE trigger.

## 17. PL/SQL

Step 1: Extension of SQL.

Step 2: Adds programming logic.

Step 3: Improves performance.

## **18. Cursors**

Step 1: Process rows one by one.

Step 2: Implicit cursor.

Step 3: Explicit cursor.

## **19. Savepoint**

Step 1: Marks transaction point.

Step 2: Helps partial rollback.