SQL INTERVIEW QUESTIONS

. What is SQL?

Answer:

SQL stands for Structured Query Language.

It is a programming language used to manage and manipulate relational databases.

SQL is used for tasks like inserting, updating, deleting, and retrieving data from databases.

2. What are the different types of SQL commands?

Answer:

Data Manipulation Language (DML): Used for data manipulation tasks like INSERT, UPDATE, DELETE, and SELECT.

Data Definition Language (DDL): Used for defining and managing database objects, e.g., CREATE, ALTER, DROP.

Data Control Language (DCL): Used for controlling access to data and database objects, e.g., GRANT, REVOKE.

3. What is a primary key in a database table?

Answer:

A primary key is a unique identifier for each record in a table.

It ensures data integrity by preventing duplicate and null values in the key column.

A primary key is used to establish relationships between tables in a database.

4. What is the difference between the WHERE clause and the HAVING clause in SQL?

Answer:

WHERE clause is used in the SELECT statement to filter rows before grouping and aggregation.

HAVING clause is used in the GROUP BY statement to filter rows after grouping and aggregation.

The WHERE clause filters individual rows, while the HAVING clause filters groups of rows.

5. What is a foreign key in a database table?

Answer:

A foreign key is a column or a set of columns that refers to the primary key of another table.

It establishes a relationship between two tables, enforcing referential integrity.

Foreign keys ensure that data in one table corresponds to data in another table.

6. What are the different types of joins in SQL?

Answer:

INNER JOIN: Retrieves matching rows from both tables based on the specified condition.

LEFT JOIN (or LEFT OUTER JOIN): Retrieves all rows from the left table and matching rows from the right table.

RIGHT JOIN (or RIGHT OUTER JOIN): Retrieves all rows from the right table and matching rows from the left table.

FULL JOIN (or FULL OUTER JOIN): Retrieves all rows when there is a match in either the left or right table.

7. How can you retrieve unique records from a table in SQL?

Answer:

Use the DISTINCT keyword with the SELECT statement to retrieve unique records.

For example: SELECT DISTINCT column1, column2 FROM table\_name;

8. What is the difference between UNION and UNION ALL in SQL?

Answer:

UNION: Combines and removes duplicate rows from the result set.

UNION ALL: Combines all rows from the result set, including duplicates.

9. How can you sort the result set in SQL?

Answer:

Use the ORDER BY clause with the SELECT statement to sort the result set based on one or more columns.

For example: SELECT column1, column2 FROM table\_name ORDER BY column1 ASC;

10. How can you limit the number of records returned by a query in SQL?

Answer:

Use the LIMIT keyword (for MySQL and PostgreSQL) or the TOP keyword (for SQL Server) to limit the number of records returned.

For example: SELECT column1, column2 FROM table\_name LIMIT 10;

11. What is the difference between a clustered index and a non-clustered index in SQL?

Answer:

Clustered index: Determines the physical order of data in a table. Each table can have only one clustered index.

Non-clustered index: Provides a separate data structure that points to the physical location of data rows. A table can have multiple non-clustered indexes.

12. What is the difference between DELETE and TRUNCATE commands in SQL?

Answer:

DELETE: Removes rows one by one from the table and can be rolled back using a transaction.

TRUNCATE: Removes all rows from the table at once and cannot be rolled back. It also resets the identity value of the table, if any.

13. What is a subquery in SQL, and how is it used?

Answer:

A subquery is a query embedded within another query.

It is used to retrieve data based on the results of an inner query or to perform calculations and filtering based on intermediate results.

Subqueries are commonly used with the IN, EXISTS, and NOT EXISTS operators.

14. How can you calculate the sum, average, count, and other aggregates in SQL?

Answer:

Use aggregate functions like SUM, AVG, COUNT, MIN, and MAX in the SELECT statement to calculate aggregates.

For example: SELECT SUM(salary) AS total\_salary FROM employee\_table;

15. What is the GROUP BY clause in SQL, and how is it used?

Answer:

The GROUP BY clause is used with the SELECT statement to group rows based on specified columns.

It is typically used with aggregate functions to calculate values for each group.

For example: SELECT department, AVG(salary) FROM employee\_table GROUP BY department;

16. What is the use of the BETWEEN operator in SQL?

Answer:

The BETWEEN operator is used to check if a value falls within a specified range (inclusive).

For example: SELECT column1 FROM table\_name WHERE column2 BETWEEN 10 AND 20;

17. How can you update records in a table using the UPDATE command in SQL?

Answer:

Use the UPDATE command with the SET keyword to modify values in a table.

For example: UPDATE employee\_table SET salary = 50000 WHERE department = 'IT';

18. What is the use of the LIKE operator in SQL?

Answer:

The LIKE operator is used to perform pattern matching on strings.

It is often used with the % wildcard to find values that contain a specific pattern.

For example: SELECT column1 FROM table\_name WHERE column2 LIKE 'A%';

19. What is the use of the NULL value in SQL?

Answer:

The NULL value represents missing or unknown data in a database.

It is not the same as an empty string or zero; it indicates the absence of a value.

NULL values can be used in SQL operations like comparisons, but they require special handling.

20. How can you create a new table in SQL using the CREATE TABLE statement?

Answer:

Use the CREATE TABLE statement followed by the table name and a list of columns and their data types.

For example: CREATE TABLE employee\_table (id INT, name VARCHAR(50), salary DECIMAL(10,2));

21. What is the difference between a database and a table in SQL?

Answer:

A database is a collection of related data and a set of programs used to access that data.

A table is a data structure within a database that organizes data into rows and columns.

22. How can you add a new column to an existing table in SQL using the ALTER TABLE statement?

Answer:

Use the ALTER TABLE statement with the ADD keyword and specify the new column name and data type.

For example: ALTER TABLE employee\_table ADD age INT;

23. What is the use of the IN operator in SQL?

Answer:

The IN operator is used to check if a value matches any value in a list of specified values.

For example: SELECT column1 FROM table\_name WHERE column2 IN (value1, value2, value3);

24. What is the use of the ORDER BY clause in SQL?

Answer:

The ORDER BY clause is used to sort the result set based on one or more columns.

It can sort the data in ascending (ASC) or descending (DESC) order.

For example: SELECT column1 FROM table\_name ORDER BY column2 DESC;

25. How can you delete a table in SQL using the DROP TABLE statement?

Answer:

Use the DROP TABLE statement followed by the table name to delete the table permanently.

For example: DROP TABLE employee\_table;

26. What is the difference between the COUNT() function and the COUNT(\*) function in SQL?

Answer:

COUNT() function: Counts the number of non-null values in a column.

COUNT(\*) function: Counts the total number of rows in a table, including rows with NULL values.

27. What is the use of the LIKE operator in SQL?

Answer:

The LIKE operator is used for pattern matching in SQL.

It is used to match values based on a specific pattern using wildcards like % (for zero or more characters) and \_ (for a single character).

For example: SELECT column1 FROM table\_name WHERE column2 LIKE 'A%';

28. What is the use of the GROUP BY clause in SQL?

Answer:

The GROUP BY clause is used with the SELECT statement to group rows based on one or more columns.

It is commonly used with aggregate functions like SUM, AVG, COUNT, etc., to calculate values for each group.

For example: SELECT department, AVG(salary) FROM employee\_table GROUP BY department;

29. How can you insert data into a table using the INSERT INTO statement in SQL?

Answer:

Use the INSERT INTO statement followed by the table name and a list of column names and their corresponding values.

For example: INSERT INTO employee\_table (name, age, salary) VALUES ('John', 30, 50000);

30. What is the difference between a candidate key and a primary key in SQL?

Answer:

Candidate key: A set of one or more columns that can uniquely identify each row in a table.

Primary key: A candidate key that is chosen to be the main unique identifier for the table. A table can have only one primary key.

1. What is a view in SQL?

Answer:

A view is a virtual table created from the result of a SELECT query.

It does not store data on its own but provides an alternative way to access data stored in one or more tables.

Views are used to simplify complex queries and provide a security layer by limiting access to specific columns.

2. What is a self-join in SQL?

Answer:

A self-join is a type of join where a table is joined with itself.

It is useful when you have a table with a hierarchical relationship, and you want to retrieve data based on that relationship.

In a self-join, you use aliases to differentiate between the two instances of the same table.

3. What is the difference between a LEFT JOIN and a RIGHT JOIN in SQL?

Answer:

LEFT JOIN retrieves all rows from the left table and matching rows from the right table.

RIGHT JOIN retrieves all rows from the right table and matching rows from the left table.

The difference lies in which table's data is preserved in the result set when there are no matches in the other table.

4. What is the use of the DISTINCT keyword in SQL?

Answer:

The DISTINCT keyword is used to retrieve unique values from a column in the result set.

It removes duplicates and shows only distinct values for the specified column.

For example: SELECT DISTINCT column1 FROM table\_name;

5. How can you add constraints to a table in SQL?

Answer:

Use the ALTER TABLE statement to add constraints to an existing table.

Common constraints include PRIMARY KEY, FOREIGN KEY, UNIQUE, CHECK, and NOT NULL.

6. What is the purpose of the GROUP BY ROLLUP modifier in SQL?

Answer:

GROUP BY ROLLUP is used to generate multiple levels of subtotal rows in the result set.

It creates subtotals for each combination of grouping columns and generates an overall total for all rows.

ROLLUP is useful for creating summary reports.

7. What is a correlated subquery in SQL?

Answer:

A correlated subquery is a subquery that references columns from the outer query.

It is evaluated for each row of the outer query, making it slower than a regular subquery.

Correlated subqueries are used when the result depends on the values of the outer query.

8. How can you delete duplicate rows from a table in SQL?

Answer:

Use the DELETE statement with a self-join to delete duplicate rows from a table.

For example: DELETE FROM table\_name WHERE id NOT IN (SELECT MIN(id) FROM table\_name GROUP BY column1, column2);

9. What is the use of the BETWEEN operator in SQL?

Answer:

The BETWEEN operator is used to check if a value falls within a specified range (inclusive).

For example: SELECT column1 FROM table\_name WHERE column2 BETWEEN 10 AND 20;

10. What is the use of the NOT IN operator in SQL?

Answer:

The NOT IN operator is used to exclude values from a result set that match any value in a subquery or a specified list.

For example: SELECT column1 FROM table\_name WHERE column2 NOT IN (value1, value2, value3);

11. How can you rename a table in SQL using the RENAME TO statement?

Answer:

SQL does not have a direct RENAME TO statement for renaming tables.

Instead, you can use the ALTER TABLE statement with the RENAME TO clause to rename a table.

For example: ALTER TABLE old\_table RENAME TO new\_table;

12. What is the purpose of the INDEX in SQL, and how does it improve query performance?

Answer:

An INDEX is a data structure that improves the speed of data retrieval from a table.

It allows the database engine to quickly locate rows based on the indexed column.

Indexes are especially helpful for large tables with frequent search and filter operations.

13. What is the use of the UNION operator in SQL?

Answer:

The UNION operator is used to combine the results of two or more SELECT queries into a single result set.

It removes duplicate rows and orders the result set based on the order of the first SELECT query.

For example: SELECT column1 FROM table1 UNION SELECT column1 FROM table2;

14. How can you update multiple columns in a table using the UPDATE command in SQL?

Answer:

Use the UPDATE command with the SET keyword, followed by a list of columns and their corresponding values.

For example: UPDATE employee\_table SET salary = 50000, department = 'HR' WHERE id = 101;

15. What is the purpose of the SQL CASE statement?

Answer:

The CASE statement is used to perform conditional logic in SQL.

It allows you to evaluate conditions and return different values based on those conditions.

The CASE statement can be used in SELECT, UPDATE, and INSERT queries.

16. What is the use of the EXISTS operator in SQL?

Answer:

The EXISTS operator is used to check if a subquery returns any rows.

It returns true if the subquery returns at least one row, and false otherwise.

EXISTS is commonly used with correlated subqueries.

17. How can you find the highest or lowest value in a column using the MAX and MIN functions in SQL?

Answer:

Use the MAX function to find the highest value and the MIN function to find the lowest value in a column.

For example: SELECT MAX(salary) FROM employee\_table; and SELECT MIN(salary) FROM employee\_table;

18. What is the use of the COALESCE function in SQL?

Answer:

The COALESCE function is used to return the first non-null value from a list of expressions.

It is often used to provide a default value when a column contains null.

For example: SELECT COALESCE(column1, 'Not available') FROM table\_name;

19. How can you calculate the difference between two dates in SQL?

Answer:

Use the DATEDIFF function to calculate the difference between two dates in SQL.

The function takes three arguments: the interval unit, the start date, and the end date.

For example: SELECT DATEDIFF('DAY', start\_date, end\_date) FROM table\_name;

20. What is the use of the SQL TRUNCATE command?

Answer:

The TRUNCATE command is used to remove all rows from a table quickly.

It is faster than the DELETE command because it does not generate individual delete operations for each row.

However, TRUNCATE cannot be rolled back and does not fire triggers.

21. What is the purpose of the SQL CHECK constraint?

Answer:

The CHECK constraint is used to enforce a condition on the values of a column.

It ensures that values inserted or updated in the column meet the specified condition.

For example: ALTER TABLE employee\_table ADD CHECK (age >= 18);

22. What is the use of the SQL LIMIT and OFFSET clauses for pagination?

Answer:

The LIMIT clause is used to restrict the number of rows returned in a result set.

The OFFSET clause is used to skip a specified number of rows before starting to return rows.

For example: SELECT column1 FROM table\_name LIMIT 10 OFFSET 20;

23. What is the use of the SQL TRIGGER, and how is it used?

Answer:

A TRIGGER is a stored procedure that automatically executes when a specific event occurs, such as INSERT, UPDATE, or DELETE on a table.

Triggers are used to enforce business rules, maintain audit logs, or perform additional actions when data changes in a table.

24. What is the difference between the CHAR and VARCHAR data types in SQL?

Answer:

CHAR is used to store fixed-length character strings with a defined length.

VARCHAR is used to store variable-length character strings, which can change in length based on the data.

25. What is the use of the SQL JOIN USING clause?

Answer:

The JOIN USING clause is used to join two or more tables based on the same column name in both tables.

It simplifies the join syntax when the tables have common column names.

For example: SELECT \* FROM employees JOIN departments USING (department\_id);

26. How can you find the second-highest salary in a table using the SQL LIMIT clause?

Answer:

Use the LIMIT clause with the OFFSET keyword to skip the first highest salary and retrieve the second highest.

For example: SELECT salary FROM employee\_table ORDER BY salary DESC LIMIT 1 OFFSET 1;

27. What is the purpose of the SQL UNION ALL operator?

Answer:

The UNION ALL operator is used to combine the results of two or more SELECT queries into a single result set.

Unlike the UNION operator, UNION ALL does not remove duplicate rows and retains all rows from all queries.

28. How can you check if a table exists in a database in SQL?

Answer:

Use the INFORMATION\_SCHEMA.TABLES view or system-specific tables like sys.tables in SQL Server to check for the existence of a table.

For example: SELECT \* FROM INFORMATION\_SCHEMA.TABLES WHERE TABLE\_NAME = 'employee\_table';

29. What is the use of the SQL INSERT INTO SELECT statement?

Answer:

The INSERT INTO SELECT statement is used to copy data from one table to another.

It allows you to select data from one or more tables and insert it into another table.

For example: INSERT INTO table2 (column1, column2) SELECT column1, column2 FROM table1;

30. What is the use of the SQL SELF JOIN and how is it implemented?

Answer:

A SELF JOIN is used to join a table with itself, treating it as two separate instances.

It is implemented by using aliases for the same table to differentiate between the two instances.

For example: SELECT e1.name, e2.name FROM employee\_table e1 JOIN employee\_table e2 ON e1.manager\_id = e2.id;

31. What is the use of the SQL CONCAT function, and how is it used for string concatenation?

Answer:

The CONCAT function is used to concatenate two or more strings together.

It can accept multiple arguments and joins them into a single string in the order they are specified.

For example: SELECT CONCAT(first\_name, ' ', last\_name) AS full\_name FROM employee\_table;

32. How can you calculate the average salary for each department using the SQL AVG function and GROUP BY clause?

Answer:

Use the AVG function with the GROUP BY clause to calculate the average salary for each department.

For example: SELECT department, AVG(salary) AS avg\_salary FROM employee\_table GROUP BY department;

33. What is the purpose of the SQL COALESCE function, and how is it used for handling NULL values?

Answer:

The COALESCE function is used to return the first non-null value from a list of expressions.

It is often used to provide a default value when a column contains null.

For example: SELECT COALESCE(salary, 0) FROM employee\_table;

34. What is the use of the SQL INNER JOIN, and how is it different from the LEFT JOIN?

Answer:

INNER JOIN retrieves only the rows that have matching values in both tables.

LEFT JOIN retrieves all rows from the left table and matching rows from the right table.

INNER JOIN is used when you want to retrieve only the rows with matching values, while LEFT JOIN is used when you want to retrieve all rows from one table and matching rows from another table.

35. How can you find the nth highest salary in a table using the SQL LIMIT and OFFSET clauses?

Answer:

Use the LIMIT clause with the OFFSET keyword to skip the first n-1 highest salaries and retrieve the nth highest salary.

For example: SELECT salary FROM employee\_table ORDER BY salary DESC LIMIT 1 OFFSET n-1;

36. What is the use of the SQL ORDER BY clause, and how is it used for sorting?

Answer:

The ORDER BY clause is used to sort the result set based on one or more columns.

It can sort the data in ascending (ASC) or descending (DESC) order.

For example: SELECT column1 FROM table\_name ORDER BY column2 DESC;

37. How can you retrieve the current date and time in SQL using the SQL NOW() function?

Answer:

Use the NOW() function to retrieve the current date and time in SQL.

For example: SELECT NOW();

38. What is the purpose of the SQL LIKE operator, and how is it used for pattern matching?

Answer:

The LIKE operator is used for pattern matching in SQL.

It is used to match values based on a specific pattern using wildcards like % (for zero or more characters) and \_ (for a single character).

For example: SELECT column1 FROM table\_name WHERE column2 LIKE 'A%';

39. How can you check if a table is empty in SQL?

Answer:

Use the COUNT(\*) function with the table name to check the number of rows in the table.

If the count is zero, the table is empty.

For example: SELECT COUNT(\*) FROM table\_name;

40. What is the use of the SQL NULLIF function, and how is it used for handling NULL values?

Answer:

The NULLIF function is used to return NULL if two expressions are equal; otherwise, it returns the first expression.

It is useful for converting a specific value to NULL if it matches a particular value.

For example: SELECT NULLIF(column1, 0) FROM table\_name;

41. What is the purpose of the SQL COUNT() function, and how is it used for counting rows?

Answer:

The COUNT() function is used to count the number of rows in a result set or the number of occurrences of a specific value in a column.

It can be used with the DISTINCT keyword to count only distinct values.

For example: SELECT COUNT(\*) FROM table\_name; and SELECT COUNT(DISTINCT column1) FROM table\_name;

42. How can you find the employees who earn more than the average salary using the SQL AVG function and WHERE clause?

Answer:

Use the AVG function to calculate the average salary and compare it with the individual salaries using the WHERE clause.

For example: SELECT \* FROM employee\_table WHERE salary > (SELECT AVG(salary) FROM employee\_table);

43. What is the use of the SQL GREATEST function, and how is it used to find the highest value among multiple columns?

Answer:

The GREATEST function is used to find the highest value among multiple columns.

It takes multiple arguments and returns the largest value.

For example: SELECT GREATEST(column1, column2, column3) FROM table\_name;

44. How can you find the employees who belong to a specific department using the SQL IN operator and WHERE clause?

Answer:

Use the IN operator with a list of department names to retrieve employees who belong to those departments.

For example: SELECT \* FROM employee\_table WHERE department IN ('HR', 'Finance');

45. What is the use of the SQL LEAST function, and how is it used to find the lowest value among multiple columns?

Answer:

The LEAST function is used to find the lowest value among multiple columns.

It takes multiple arguments and returns the smallest value.

For example: SELECT LEAST(column1, column2, column3) FROM table\_name;

46. How can you find the employees whose names start with a specific letter using the SQL LIKE operator and WHERE clause?

Answer:

Use the LIKE operator with the % wildcard to find employees whose names start with the specified letter.

For example: SELECT \* FROM employee\_table WHERE name LIKE 'J%';

47. What is the use of the SQL BETWEEN operator with dates, and how is it used for date range filtering?

Answer:

The BETWEEN operator can be used with dates to filter rows within a specific date range.

It checks if the date falls between two specified dates (inclusive).

For example: SELECT \* FROM orders WHERE order\_date BETWEEN '2023-01-01' AND '2023-03-31';

48. How can you find the second row of a result set in SQL using the LIMIT and OFFSET clauses?

Answer:

Use the LIMIT clause with the OFFSET keyword to skip the first row and retrieve the second row.

For example: SELECT \* FROM table\_name LIMIT 1 OFFSET 1;

49. What is the purpose of the SQL ALL and ANY operators, and how are they used?

Answer:

The ALL operator is used to compare a value with all values in a result set and returns true if the condition is true for all values.

The ANY operator is used to compare a value with any value in a result set and returns true if the condition is true for at least one value.

For example: SELECT \* FROM products WHERE price > ALL (SELECT price FROM products WHERE category = 'Electronics');

50. How can you find the employees who earn the second-highest salary using the SQL ORDER BY and LIMIT clauses?

Answer:

Use the ORDER BY clause to sort the employees by salary in descending order and then use the LIMIT clause to retrieve the second row.

For example: SELECT \* FROM employee\_table ORDER BY salary DESC LIMIT 1 OFFSET 1;  
  
Certainly! Here are 20 more DBMS (Database Management System) questions along with their simple answers:

21. What is a database transaction log in DBMS?

Answer:

The database transaction log is a file that records all the changes made to the database.

It helps in recovering the database to a consistent state in case of system failures or crashes.

The transaction log ensures the durability and atomicity of transactions.

22. What is the purpose of the SQL JOIN operation in DBMS?

Answer:

The JOIN operation is used to combine rows from two or more tables based on related columns.

It helps retrieve data from multiple tables and build meaningful results.

Types of JOIN include INNER JOIN, LEFT JOIN, RIGHT JOIN, and FULL JOIN.

23. What is the difference between a clustered and non-clustered index in DBMS?

Answer:

A clustered index determines the physical order of data rows in a table, whereas a non-clustered index does not.

A table can have only one clustered index, but multiple non-clustered indexes.

A clustered index is faster for retrieving data, but it slows down insert and update operations compared to non-clustered indexes.

24. What is a database view in DBMS?

Answer:

A database view is a virtual table derived from the result of a SELECT query on one or more base tables.

It provides an abstracted and simplified representation of data for users and applications.

Views are used to restrict data access, simplify complex queries, and present data from multiple tables as a single entity.

25. What is the use of the SQL TRUNCATE TABLE command in DBMS?

Answer:

The TRUNCATE TABLE command is used to remove all rows from a table quickly.

Unlike the DELETE command, TRUNCATE TABLE does not generate individual delete operations for each row, making it faster.

However, TRUNCATE TABLE cannot be rolled back and does not fire triggers.

26. What are the different types of database integrity constraints in DBMS?

Answer:

Domain Integrity: Ensures that data values in a column meet specified data type and format requirements.

Entity Integrity: Ensures that each row in a table is uniquely identifiable by a primary key.

Referential Integrity: Ensures that relationships between tables are maintained through foreign keys.

27. What is the purpose of the SQL ORDER BY clause in DBMS?

Answer:

The ORDER BY clause is used to sort the result set based on one or more columns.

It can sort the data in ascending (ASC) or descending (DESC) order.

For example: SELECT column1 FROM table\_name ORDER BY column2 DESC;

28. What is a database index scan in DBMS?

Answer:

A database index scan is a method used by the database engine to locate data using an index.

It can be of two types: Index Seek and Index Scan.

Index Seek directly navigates the index to locate specific data, while Index Scan reads through the entire index to find the desired data.

29. What is the use of the SQL GROUP BY clause in DBMS?

Answer:

The GROUP BY clause is used with the SELECT statement to group rows based on one or more columns.

It is commonly used with aggregate functions like SUM, AVG, COUNT, etc., to calculate values for each group.

For example: SELECT department, AVG(salary) FROM employee\_table GROUP BY department;

30. What is a materialized view in DBMS?

Answer:

A materialized view is a database object that stores the result of a query as a physical table.

It is updated periodically based on a defined schedule or when the underlying data changes.

Materialized views are used to improve query performance and reduce the load on the source tables.

31. What is the use of the SQL HAVING clause in DBMS?

Answer:

The HAVING clause is used to filter the result set based on conditions applied to aggregate functions in the SELECT statement.

It is used in combination with the GROUP BY clause to filter groups of rows.

For example: SELECT department, AVG(salary) FROM employee\_table GROUP BY department HAVING AVG(salary) > 50000;

32. What is the difference between a database and a database management system in DBMS?

Answer:

A database is a collection of organized data stored on disk or memory.

A database management system (DBMS) is software used to create, maintain, and retrieve data from the database.

The DBMS manages the database, handles access, security, transactions, and ensures data integrity.

33. What is the purpose of the SQL ROLLBACK statement in DBMS?

Answer:

The ROLLBACK statement is used to undo changes made by an incomplete or failed transaction.

It restores the database to its previous consistent state.

For example: ROLLBACK;

34. What are the different levels of data abstraction in DBMS?

Answer:

Physical Level: Describes how data is stored and organized on the physical storage medium.

Logical Level: Describes the structure and relationships of the data, independent of the physical storage.

View Level: Describes how users perceive the data through views or virtual tables.

35. What is a database trigger in DBMS?

Answer:

A database trigger is a stored procedure that automatically executes when a specific event occurs, such as INSERT, UPDATE, or DELETE on a table.

Triggers are used to enforce business rules, maintain audit logs, or perform additional actions when data changes in a table.

36. What is the use of the SQL COMMIT statement in DBMS?

Answer:

The COMMIT statement is used to permanently save changes made during a transaction to the database.

It makes the changes permanent and ends the transaction, making the data visible to other users and applications.

For example: COMMIT;

37. What is the purpose of the SQL CHECK constraint in DBMS?

Answer:

The CHECK constraint is used to enforce a condition on the values of a column.

It ensures that values inserted or updated in the column meet the specified condition.

For example: ALTER TABLE employee\_table ADD CHECK (age >= 18);

38. What is the use of the SQL UNIQUE constraint in DBMS?

Answer:

The UNIQUE constraint ensures that values in a column are unique and do not contain duplicates.

It is used to enforce data integrity when you want to ensure that a column contains only unique values.

For example: ALTER TABLE employee\_table ADD UNIQUE (employee\_id);

39. What is the use of the SQL DEFAULT constraint in DBMS?

Answer:

The DEFAULT constraint is used to set a default value for a column if no value is provided during an INSERT operation.

It ensures that the column always has a value even if the user does not specify one.

For example: ALTER TABLE employee\_table ADD DEFAULT 'Unknown' FOR department;

40. What is the use of the SQL FOREIGN KEY constraint in DBMS?

Answer:

The FOREIGN KEY constraint establishes a relationship between two tables by referencing the primary key of one table in another table.

It ensures referential integrity and maintains the relationships between tables.

For example: ALTER TABLE orders ADD FOREIGN KEY (customer\_id) REFERENCES customers(id);

These additional 20 DBMS questions and answers provide further insights into database management concepts and techniques. Familiarizing yourself with these topics will enhance your understanding of DBMS and help you excel in your interviews or database-related tasks. Good luck!