SQL Interview Questions

Q1. What is SQL?

Ans 1🡪SQL (structure Query Language) is used to store,retrieve and mange data in relational databse.

Q2.What is relational database?

Ans2🡪A database where data is stored in form of rows and columns.

Q3.Differnece Between SQL and MYSQL?

Ans3🡪SQL is the Language and MYSQL is a database management system that uses SQL.

Q4. What is a database?

Ans4🡪A set of rows and columns that store related data.

Q5.What is primary key?

Ans5🡪A column that uniquely identifies each row.

Q6. What is foreign Key?

Ans6🡪A Column linking one table to another.

Q7.What are constraints?

Ans7🡪Constraints are the rules that enforce data accuracy like Primary key, foreign key, unique ,Not NULL.

Q8.What are Different types of SQL Command?

Ans8🡪.DDL(create,Alter,DROP) --> structure.

.DM(insert,update,Delete)-->data.

.DCL(Grant,Revoke) --> permission

.TCL(commit,Rollback)-->transactions

Q9.Differnece between Delete, Truncate and Drop?

Ans9🡪.Delete ->removes rows but keeps structure ,can rollback.

.truncate->remove all rows, keeps structure can’t rollback.

.drop -> removes table completely.

Q10. Difference Between Where and Having clause?

Ans10🡪.Where ->filters before grouping.

.Having->filters after grouping.

Q11. Difference between Order BY and Group By?

Ans11🡪.Order by->sort rows.

.Group By ->Group rows for aggregation( for doing maths opertions like count,sum,total).

Q12. What is Distinct?

Ans12🡪Removes duplicates from result.

Q13.Explain all types of Joins?

Ans13🡪 .Inner Join -> gives matching rows in both tables.

.Left Join -> gives all rows from left + matching rows from right.

.Right Join -> gives all rows from right + matching rows from left.

Q14. What is Self join?

Ans14🡪 A table joins with itself.

Q15.what are Aggregate functions?

Ans15🡪Aggregate functions are used to perform math on sets of data Some of the aggregate functions are Count,AVG,Min,Max,Sum.

Q16.What are scaler functions?

Ans16🡪Scaler functions are the functions which operate on single values Some of them are upper,lower,len,now.

Q17Write a Query to find Highest Salary?

Ans17🡪Select Max(Salary) from employees.

Q18. Write a Query to count employees in each department.?

Ans18🡪Select department ,Count(\*) from employees.

Q19. What is SubQuery?

Ans19🡪SubQuery is a Query inside another query.

Q20. Difference between corelated vs Non-corelated ?

Ans20🡪.Corelated ->Query runs once per row.

.Non-corelated->Query runs once and it’s result is saved.

Q21.what is a view?

Ans21🡪A saved SQL query acting like a virtual table.

Q22.What is stored Procedure?

Ans22🡪It is pre-written SQL code stored in DB.

Q23. What is trigger?

Ans23🡪Trigger is auto-executed code on an event like insert.

Q24. What is Normalization?

Ans24🡪Normalization is Organizing data to reduce redundancy(1nf,2nf,3nf).

Q25. What is Redundancy?

Ans25🡪Redundancy is storing the same data in multiple places.

Q26.Difference Between Clustered vs Non-Clustered Index?

Ans26🡪.Clustered->It Rearranges table data.

.Non-Clustered->it Seprates structure with pointers.

Q27.How would you improve Query performance?

Ans27🡪By using Indexes, avoid Select\* ,optimize joins and limit results.

Q28.Write command to handle Null values?

Ans28🡪 ISNULL and ISNotNULL.

Q29.Write a SQL Query to find Duplicates?

Ans29🡪 Select name,count(\*) from employees Group By name Having count(\*) >1;

Q30.Write a Query to find the second highest salary?

Ans30🡪Select Max(Salary) as secondHighestSalary

From Employees

Where Salary <(select Max(salary) from employees

Q31.Write a SQL Query to find the number of employees in each department and sort the result by employee count in descending order?

Ans31🡪Select Department, Count(\*) as employeeCount

From Employees

Group BY Department

Order By employeeCount desc;

Q32.Write a MongoDB Query to find all employees in IT Department?

Ans32🡪db.employees.find({“Department:IT”});

Q33. Explain the difference Between SQL Join and MongoDB embedding/referencing?

Ans33. Join ->When we need to get related data from multiple tables we use join

Embedding->store related data inside one document(like student + address together)

Referencing-> store only an ID link to another document

In short we can say that SQL joins tables and MongoDB links documents.

Q34.Using Employee table write a query to find employees who joined in 2021?

Ans34🡪Select\* from employees where (JoinDate)=2021;

Q35. Write a Query to find avg salary of each department ,but only include departments where the Average Salary is more than 6000?

Ans35🡪Select Department,AVG(salary) AS AvgSalary

From employees

Group BY department

Having AVG(Salary) >6000;

Q36.Write a Query to find the top 2 highest salaries in the employees Table aloung with the employees names?

Ans36🡪Select name,salary

From employees

Order BY DESC

Limit 2;

Q37Write a Query to find employees who earn more than the avg salary of all employees?

Ans37🡪 Select name,salary

From employees

Where salary > (select AVG(salary) from employees);

Q38.Write a query to list the departments that have the highest number of employees?

Ans38🡪Select Department ,Count(\*) As EmployeeCount

From employees

Group BY department

Order BY EmployeeCount DESC

Limit 1;

Q39. Write a Query to find the names of employees who have the same salary as someone else in the company?

Ans39🡪Select name,salary

From employees

Where salary in (

Select salary

From Employees

Group BY Salary

Having Count(\*) >1

);

Q40. Write a query to Delete All Employees from HR Department?

Ans40🡪Delete From Employees where department =”HR”;

Q41.In MongoDB What are Indexes and why we use them and what are the drawbacks of using Too many indexes?

Ans41🡪Indexes are special Data structure that makes make searching better, similar to an index in a book and Every collection has a default \_id as an index, But we can create indexes on the other fields to optimize queries.

.The downside is they use extra memory and slows down inserts and updates because the index also must be maintained.