SQL Interview Questions

1.What is Relational Database Management System

(RDMBS)?

Ans: RDBMS is a program used to maintain to a relational database. RDBMS is the basics of modern database systems such as MySQL, Microsoft SQL Server, Oracle and Microsoft access. RDBMS uses SQL queries to access the data in the database.

2.What is Structured Query Language?

Ans: SQL is s standardized programming language that is used to manage relational database and perform various operations on the data in them. Initially created in the 1970’s, SQL is regularly used not only ion database administrators, But also by developers writing data integrating scripts and data analysts looking to set up and run analytical queries.

3.What is a Database?

Ans: A DATABASE is information that is set up for easy access, management and updating. Computer database typically store aggregations of data records or files that contain information, such as sales transaction, customer idea, financial and product information.

4.What is primary key?

Ans: The PRIMARY KEY constraint uniquely identifies each record in a table. Primary keys must contain UNIQUE values and cannot contain NULL values. A table can have only one primary key, and in the table, this primary key can consist of single or multiple columns (fields).

5.What is a unique key?

Ans: The Unique key ensures that the all the values in a column are different. Both the Unique and primary key constraints provide a guarantee for uniqueness for a column or set of columns. However, you can have many unique constraints in a table, but only one primary key constraint per table.

6.What is a foreign key?

Ans: A foreign Key is a field (or collection of fields) in one table, that refers to the primary key in another table. The table with the foreign key is called the child table and the table with the primary key is called the reference or parent table.

7.Explain the difference between spreadsheets and

databases.

Ans: Databases uses tables as a means of storing and retrieving information. Tables are organized as columns(fields) and rows(records). This tabular structure is similar to spreadsheets, but unlike a spreadsheet, most database are relational, meaning that data between tables can be linked and cross-referenced.

8.What are table and fields?

Ans: Table contains rows and columns, where the rows are known as records and the colunms are known as fields. A columns(fields) is a set of data values of a particular type (like number or alphabets), one value of each row is a database, for example age, Student\_ID or Student\_name.

9.Explain the various SQL languages.

Following are the four different types of language or command which are widekly used in SQL:

1. TCL (Transaction Control Language)
2. DML (Data Manipulation Language)
3. DCL (Data Control Language)
4. DDL (Data Definition Language)

10. What is normalization?

Ans: Normalization is the process of organizing the data in the database. Normalization is used to minimize the redundancy(having multiple copies of same data in database) from a relation or set of relations. It is also used to eliminate undesirable characteristics like insertion, Update and deletion anomalies(deviation from the norm). 1NF, 2NF and 3NF are the first three types of database normalization. They stand for first Normal form, second Normal form and Third Normal form respectively.

11. What is denormalization?

Ans: Denormalization is the process of improving the read performance of the database, at the expense of losing some written performance, by adding redundant copies data or by grouping it.

12. Explain the different types of normalization.

ANS: 1NF: A relation is in 1NF if all its attributes have an atomic value.

2NF: A relation is in 2NF if it is in 1NF and all non-key attributes are fully functional dependent on the candidate key.

3NF: A relation is in 3NF if it is 2NF and there is no transitive dependency.

13. What are views in SQL?

Ans: A view is a virtual table based on the result-set of an SQL statement. A view contains row and columns, just like real table. The fields in a view are fields from one or more real tables in a database.

14. What is join? Explain the different types.

Ans: A JOIN clause is used to combine two or more tables, Based on related column between them.

Types of JOINs: Inner JOINs, Outer JOINs and cross JOINs.

Outer JOINs further classified as Left Outer JOINs Right Outer JOINs and full outer JOINs.

15. What are the different types of indexes?

Ans: Cluster Index and Non-Cluster Index

Column Store Index

Filtered Index

Hash Index

Unique Index

16. What is a cursor in SQL?

Ans: Cursor is a temporary memory or temporary workstation. It is allocated by database server at the time of performing DML operations on table by user. Cursors are used to store database tables.

17. What is query?

Ans: A query is a request for data or information form a database table or combination of tables. For

example, trend analysis from data-mining tools

18. What is a subquery?

Ans: In SQL Query, if possible, to place a SQL query inside another query known as a Subquery.

19. What is a trigger?

20. Differentiate between the DELETE and TRUNCATE commands.

Ans: Delete command deletes one or more existing records from the table in the database.

Truncate command deletes all the rows from the existing table, leaving the row with the column names.

Drop Command drops the complete table from the database.

21. What are constraints?

Ans: SQL constraints are used to specify rules for the data in a table and ensures accuracy and reliability of the data in the table.

22. What is data integrity?

Ans: The term Data Integrity refers to the accuracy and consistency of data. It means that the data present in SQL Server is written Correctly and is where it is expected to be.

23. What is auto increment?

Ans: Auto increment allows a unique number to be generated automatically when a new record os inserted into a table. Often this is the primary key field that we would like to be created automatically every time a new record is inserted.

24. What is a data warehouse?

Ans: SQL data Warehouse stores the data in relational tables using columnar storage which reduce the data storage costs and improves the query performance. SQL data Warehouse leverages a scale-out architecture to distribute computational processing of data across multiple nodes.

25. What is the difference between DROP and TRUNCATE

statements?

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Drop Command drops the complete table from the database.

26. What is alias in SQL?

Ans: An alias lets us create a short cut name for a command, file name, or any shell text. By using aliases, we save a lot of time when doing tasks, we do frequently.

27. How can we create tables in SQL?

Ans we can create a table with create command in SQL and the SYNTAX like

CREATE TABLE <TABLE NAME>(COL1,COL2,COL3…);

After every column we have to mention particular data type and respective constraints.

28. How can we insert data in SQL?

Ans: we can insert the data in row wise called a record. We insert the records with help of insert command in SQL and the syntax is follows.

INSERT INTO <TABLE NAME> (COL1,COL2,COL3…) VALUES(VAL1,VAL2,VAL3…) ;

29. How can we change a table name in SQL?

Ans: we rename the table name using alter and rename to commands.

ALTER TABLE <OLD NAME> RENAME TO <NEW NAME >;

30. What are nested queries?

Ans: When a query is included inside another query, the outer query is known as main query, and inner

Query is known as Subquery. In Nested Query, inner query runs first, and only once. Outer query is executed with result from inner query. Hence, inner query is used in execution of outer query.

37. What is the difference between CHAR and VARCHAR2 data types ?

Ans:

|  |  |
| --- | --- |
| CHAR | VARCHAR |
| Data type helps to store character | Data type helps to store variable character |
| Fixed length | Length long with 1 byte or 2-byte length prefix |
| Holds max. 255 character | Holds max of 65535 |
| Uses static memory allocation | Uses dynamic memory allocation |
| Programmer can use char when the size of the column data entries is consistent | Programmer can use varchar when the size of the column data entries changes considerably. |

38. What is difference between SQL and PL/SQL?

Ans: SQL is used relational databases to execute various queries like create table, delete table, insert table,

39. What is the difference between SQL and MySQL?

40. What is cross join?

41. What are user defined functions?

42. What is a CLAUSE?

43. What is recursive stored procedure?

44. Explain UNION, MINUS and INTERSECT commands?

45. How can we select unique records from a Table?

46. List and explain each of the ACID properties that collectively guarantee that database

transactions are processed reliably.

47. What is the main difference in the BETWEEN and IN condition operators?

48. What are SQL functions used for?

49. List some case manipulation functions in SQL.

50. Is semicolon used after sql? Justify why or why not.

51. What is candidate key?

52. What is the difference between JOIN and UNION?

53. What is the difference between order and group by?

58. Write an SQL query to fetch employee names having a salary greater than or equal to

20000 and less than or equal to 10000.

59. How can we select unique records from a table?

60. What is the command used to fetch the first 5

characters of the string?

61. How to use LIKE in SQL?

62. How can we copy a table in SQL?

63. If we drop a table, does it also drop related objects?

64. Can you join a table by itself?

65. Explain Equi join with an example.

66. Explain non-Equi join with an example.

67. Write an SQL query to show the second highest salary from a table.

68. How would you select all the users whose phone number is NULL?

69. Write an SQL query to fetch three max salaries from a table.

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

71. What are the differences between the HAVING clause, and the WHERE clause?