1) What is SQL?

SQL stands for Structured Query Language , and it is used to communicate with the Database. This is a standard language used to perform tasks such as retrieval, updation, insertion and deletion of data from a database.

Standard SQL Commands are Select.

2) What is a primary key?

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).

A primary key is a combination of fields which uniquely specify a row. This is a special kind of unique key, and it has implicit NOT NULL constraint. It means, Primary key values cannot be NULL.

3) What is a foreign key?

The FOREIGN KEY constraint is a key used to link two tables together.

A FOREIGN KEY is a field (or collection of fields) in one table that refers to the PRIMARY KEY in another table.

A foreign key is one table which can be related to the primary key of another table. Relationship needs to be created between two tables by referencing foreign key with the primary key of another table.

4) What is SQL, and what is it used for?

SQL (Structured Query Language) is a programming language used to manage and manipulate data in a relational database. It is used to create, update, delete, and retrieve data from the database.

5) What is a database, and how is it different from a table?

A database is a collection of data organized in a specific manner. A table is a component of a database that stores data in rows and columns. A database can have multiple tables and other objects, such as views, stored procedures, and functions.

6) What is a primary key, and why is it important?

A primary key is a column or a set of columns that uniquely identifies each row in a table. It is important because it ensures that each row in the table can be uniquely identified and that the data is organized in a structured and logical manner.

7) What is a foreign key, and how is it used?

A foreign key is a column or a set of columns in one table that refers to the primary key of another table. It is used to establish a relationship between two tables, allowing data to be connected and related across different tables.

8) What is a join, and how does it work?

A join is used to combine data from two or more tables based on a related column between them. The join operation compares the related column in each table and returns a result set that contains data from both tables**.**

9) What is a subquery, and how is it used?

A subquery is a query that is nested within another query. It is used to retrieve data that will be used by the main query. Subqueries can be used in the SELECT, FROM, WHERE, and HAVING clauses of a query.

10) What is a view, and how is it different from a table?

A view is a virtual table that is based on the result set of a SELECT statement. Unlike a table, a view does not contain data on its own but instead presents data from other tables in a structured format. Views can be used to simplify complex queries, limit access to sensitive data, and provide a different perspective on the data.

11) What is normalization, and why is it important?

Normalization is the process of organizing data in a database to reduce data redundancy and improve data integrity. It is important because it helps to eliminate data anomalies, reduce storage requirements, and improve data accuracy.

12) What is an index, and how is it used to improve performance?

An index is a database object that improves the performance of queries by providing a quick lookup mechanism for specific columns. It is used to speed up the data retrieval process by allowing the database to quickly locate rows based on the indexed column.

13) What is a transaction, and why is it important in database management?

A transaction is a set of database operations that are performed as a single unit of work. It is important because it ensures data consistency and integrity by allowing multiple changes to be made to the database as a single unit, ensuring that either all changes are committed or none are committed.