1.

- It is the process of organizing the data in the database.
- It is used to reduce data redundancy.
- Inconsistent data to consistent data.

Type of Normalization

a. 1NF
b. 2NF
c. 3NF
d. BCNF
e. 4NF
f. 5NF

a. 1NF:-
   Characteristics of 1NF:-
   i. It removes repeated groups
   ii. Identify primary key

b. 2NF:-

   Characteristics of 2NF:-

   i. It satisfies 1NF
   ii. No partial dependency

c. 3NF:-
   Characteristics of 3NF:-
   i. It satisfies 2NF
   ii. No transitive dependency.
d. BCNF:- Boyce-Code Normal form it is a advanceversion of 3NF.
e. 4NF:-
   Characteristics of 4NF:-
   i. It satisfies BCNF
   ii. No multi value dependency.

2.

a. SUPER KEY

- It is noting but a key which we just understood in the beginning.
- An attribute or a set off attributes that can be used to identify row of data in a table is a super key.

b. CANDIDATE KEY

- It is nothing but minimal subset of super key.
- It any proper subset of a super key is a super key then that key cannot be a candidate key.

c. PRIMARY KEY

- The candidate key chosen to uniquely identify each row of data in a table.
- No two rows can have the same primary key value, primary key value cannot be null and every row must have a primary key.

d. FOREIGN KEY

- It is an attribute in a table which is used to define its relationship with another table.
- Using foreign key helps in maintain data integrity for tables in relationship.

3.

- Easy structure
- Data integrity
- Easy to access
- High security
- High performances
- Acid properties

4.

In DBMS , the data is stored as a file, while in RDBMS, the information s stored in tables. DBMS can only be used by single user, whereas multiple users can use use RDMBS. Client-server side interaction and architecture are only supported in RDBMS, whereas DBMS does not support client-server side interaction.

5.

A database is an organized collection of structured information, or data ,typically stored electronically in a computer system. A database is usually controlled by a database management system.

6.

- data redundancy
- data inconsistency
- low security
- attributes for accessing file

7.

- Data Definition Language (DDL)

It is a language that allows the user to define the data and their relationship to other types of data. The DDL commands are: Create, Alter, Rename, Drop, Truncate.

- Data Manipulation Language (DML)

It is a language that provides a set of operations to support the basic data manipulation operation on data held in the database. The DML commands are: Insert, delete, update, select, merge

- Data control Language(DCL)

DCL is used to access the stored data. It is mainly used for revoke and grant the user access to a database. The DCL commands are: Grant, Revoke.

- Transaction Control language (tcl)

  TCL is a language which manages the transactions within the database. It is used to execute the changes made by the data manipulation language statements. The TCL commands are: Commit, Rollback.

8.

a. One-to-one: One to one is implemented using single table by establishing relationship between same type of columns in a table.
b. One-to-many: Implemented using two tables with primary key and foreign key relationships.
c. Many-to-many: Implemented using a junction table. The keys from both the tables form composite primary key of the junction table.

9.

Delete

a. The DELETE command is used to delete specified rows.
b. It is a DML(Data Manipulation Language) command.
c. There may be a WHERE clause in the DELETE command in order to filter the records

Truncate

a. While this command is used to delete all the rows from a table.
b. While it is a DDL(Data Definition Language) command.
c. While there may not be WHERE clause in the TRUNCATE command.