1.What is normalization?

It is a method to breaking down a large complex tables into smaller ,related table and define relationship between them.

It reduce the redundancy of data in a table also remove inconsistency problem and unwanted risk.

2.Explain primary vs foreign key.

Primary key –

* It is used to identify the records uniquely from a table.
* Only one column in a table can be assigned as a primary key.
* Primary key is a combination of unique and not null constraints.
* Primary key does not accept null values and duplicate values.

Foreign key –

* It is used to established the relationship between two tables.
* There can be any number of foreign key in a table.
* Foreign key is not a combination of unique and not null constraints.
* Foreign key accept null and duplicate values.
* For a column to be consider as foreign key it should be the primary key of it’s own table

3.What are constraints?

They are rules assigned to a column for validation purpose.

Classification are:

1.unique

2.check

3.not null

4.primarykey

5.foreign key

4.What is a surrogate key?

A surrogate key is an artificial key used to uniquely identify a record when no natural key exists. It is usually an auto-incremented number.  
Example: Employee\_ID generated automatically instead of using a combination of first and last name.

5.How do you avoid data redundancy?

In a file processing system the same data may be duplicated in serval files. To avoid this we used Normalize the database ,Use foreign keys to avoid data duplication, Create separate tables for repetitive data , Use joins instead of duplicating data.

6.What is ER diagram?

* It stand for entity relationship model.
* It also know as conceptual framework used to describe and design the structure of a database.
* Before understanding the ER model it is very import to know the diagram

ER-Diagram-

* The graphical representation of ER diagram and the model through which we describe the relationship called ER model.
* In ER diagram the logical structure of object table are group together called relationship.

7.What are the types of relationships in DBMS?

* One-to-One**:** Each row in table A is linked to only one row in table B.
* One-to-Many**:** One row in table A can have multiple matching rows in table B.
* Many-to-Many**:** Multiple rows in table A can be related to multiple rows in table B .

8.Explain the purpose of AUTO\_INCREMENT.

AUTO\_INCREMENT is used to automatically generate a unique sequential number for a column, typically used for primary keys.

9.What is the default storage engine in MySQL?

The default storage engine is InnoDB , which supports transactions, foreign keys, and row-level locking.

10.What is a composite key?

A composite key is a combination of two or more columns used together to uniquely identify a row in a table.  
Example**:** In an Order table, (OrderID, ProductID) can serve as a composite key to uniquely identify each order item.