What is an Entity?

An entity is an object that exists. It doesn't have to do anything; it just has to exist. In database administration, an **entity** can be a single thing, person, place, or object.

What is an Entity set?

It is a set of entities of same entity type. So a set of one or more entities of Student Entity type is an Entity Set.

What is an attribute?

It is a property of an entity. For example, in table STUDENT id,name and Age are properties of an entity of entity type student. Hence these are attributes.

What is Relationship?

The association among entities is called a relationship.

What is Weak Entity set?

In a relational database, a **weak entity** is an entity that cannot be uniquely identified by its attributes alone; therefore, it must use a foreign key in conjunction with its attributes to create a primary key.

Define the term derived attribute?

Derived attributes are the attributes that do not exist in the physical database, but their values are derived from other attributes present in the database.

Define multivalued attribute?

Multi-value attributes may contain more than one values.

What is generalization?

Generalization is the process of extracting common properties from a set of entities and creates a generalized entity from it.

List different types of cardinalities?

Cardinality is the number of instance of an entity from a relation that can be associated with the relation.

- One to one
- One to many
- Many to one
- Many to many

What is super Key Constraint? Explain its uses

A set of attributes (one or more) that collectively identifies an entity in an entity set.

What is Relational Model?

The **relational model** (**RM**) for database management is an approach to managing data using a structure and language consistent with first-order predicate logic, first described in 1969 by Edgar F. Codd, where all data is represented in terms of tuples, grouped into relations. A database organized in terms of the relational model is a relational database.

How primary key is represented in a ER model ?

Primary key is represented by underline the attribute name.

What is Candidate Key constraint?

A minimal super key is called a candidate key. An entity set may have more than one candidate key.

List different types of constraints?

- Domain integrity
- Entity integrity
- Referral Integrity

What is Primary Key Constraint? Explain its uses

A primary key avoids duplication of rows and does not allow null values. It can be defined on one or more columns in a table and is used to uniquely identify each row in a table. These values should never be changed and should never be null

Define the term DDL?

Data base schema is specified by a set of definitions expressed by a special language called a data definition language.

What are the categories of SQL command?

SQL commands are divided in to the following categories:

Data Delimitation language

Data manipulation language

Data control language

Transaction Control Language

What is difference between Truncate and Delete?

i) TRUNCATE TABLE removes the data by deallocating the data pages used to store the table data and records only the page deallocations in the transaction log.

ii) The DELETE command is used to remove rows from a table

1 Listout the datatypes of SQL?
2 char(size)
3 varchar(size)
4 integer
5 number(p,s)
6 date
7 long
8 raw/long raw
9 real (or) float(size)

What is difference between Char and Varchar2? Explain its uses

The length is fixed and indicates the number of characters declared when a table is created. It can be any value from **0** to **255 bytes**.The length is variable, but the maximum is specified when creating a table. Maximum lengths can range from **0** to **255 bytes** (before MySQL 0.3) or from 0 to **65,535 bytes** in later versions.

What is DML?

DML commands are the most frequently used SQL commands and is used to query and manipulate the existing database objects.

What are DML commands? Give the general form of SQL Queries?

Some of the commands are Insert, Select, Update, Delete.

Select A1, A2……., An From R,1R2……, R m Where P

What is the use of rename operation?

Rename operation is used to rename both relations and an attributes. It uses the as clause, taking the form: Old-name as new-name.

Define tuple variable?

Tuple variables are used for comparing two tuples in the same relation. The tuple variables are defined in the from clause by way of the as clause.

Write the syntax to retrieve specific columns from a table?

Syntax: Select column_name1, …..,column_namen from table name;

What is difference between union and union all?

UNION combines the result set of two or more queries into a single result set. This result set includes all the rows that belong to all queries in the UNION. UNION ALL is very similar

to UNION. It also includes duplicate rows in the result set.

What are SET operators and list out all?

Different types of SET operations, along with example:

UNION

UNION ALL

INTERSECT

MINUS

What is the use of Existsoperation?

The EXISTS operator is used to test for the existence of any record in a subquery.The EXISTS operator returns true if the subquery returns one or more records.

Definethe condition for union operations on two tables?

- The same number of columns selected
- The same number of column expressions
- The same data type and
- Have them in the same order

Define the use of using Any and All operators on queries?

The ALL operator is used to compare a value to all values in another value set. The ANY operator is used to compare a value to any applicable value in the list as per the condition.

What is Nested Query?

Nesting of queries one within another is known as a nestedqueries.

What are Joins? Give the general form of joining two tables?

The purpose of a join concept is to combine data spread across tables. A join isactually performed by the ‘where’ clause which combines specified rows of tables.

What is the difference between left outer join and right outer join?

It extends the result of a simple join. An outer join returns all the rowsreturned by simple join as well as those rows from one table that do not match anyrow from the table. The symbol (+) represents outer join.Inner join returns the matching rows from the tables that are beingjoined.

Define Correlated Nested query?

A sub query is evaluated once for the entire parent statement whereas a correlated Sub query is evaluated once per row processed by the parent statement.

Write the syntax for Equijoin of two tables?

Select column_list from table1,table2…. Where tablecolumn_name=tablecolumn_name2

What is view?

A view is a logical table based on a table or another view. A view contains no data of its

own but is like a window through which data from tables can be viewed or changed.

What are aggregate operators and list out all?

- Count
- Max
- Min
- Sum
- avg

What is the use of count() and count(*)?

The SQL COUNT() function returns the number of rows in a table satisfying the criteria specified in the WHERE clause. It sets the number of rows or non NULL column values.

Define the use of group by and Having clause?

The **HAVING Clause** enables you to specify conditions that filter which group results appear in the results. Expressions that are not **encapsulated** within an aggregate function and must be included in the GROUP BY Clause at the end of the SQL statement.

Write the syntax to retrieve specific columns from a table using aggregate operators?

SELECT aggregateoperator(*column_name*) FROM *table_name* WHERE *condition*;

What is trigger?

Triggers are statements that are executed automatically by the system as the side effect

of a modification to the database. The triggers can be initiated before the event or after the event.

What kind of operations can be performed using trigger?

BEFORE, INSTEAD OF, AFTER, and CONFLICT

What is the difference between before update and after update?

All the code written in the "before update" triggers, executes BEFORE that DML is committed. After update trigger generally works when you want to update any other object.

How many triggers are possible per table?

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When multiple after triggers are attached to sql table, how to control the order of execution?

Using SV_SET trigger order procedure is used for the execution of multiple triggers.

What is a stored procedure?

Stored procedures in SQL Server can accept input parameters and return multiple values of output parameters; in SQL Server, stored procedures program statements to perform operations in the database and return a status value to a calling procedure or batch.

What are the advantages of using stored procedures?

- Maintainability
- Testing
- Speed / Optimization

How you will execute stored procedures as a different user?

Execute as user=’special user’
Execute procedure name

Can you return the Null values using stored procedures?

No

Where the stored procedures are stored in database?

A stored procedure is sub routine available to application accessing a relational database system. It is actually stored in the database data dictionary.

1. **Define the concept of cursor?**

A cursor is a temporary work area created in the system memory when a SQL statement is executed. A cursor contains information on a select statement and the rows of data accessed by it.

What are the different types of cursors?

- Implicit

- Explicit

Why does %ISOPEN return false for an implicit cursor?

Implicit cursors: SQL%ISOPEN always returns FALSE, indicating that the implicit cursor has been closed.

What are the differences between Implicit and Explicit Cursors?

An implicit cursor is one created "automatically" for you by Oracle when you execute a query. An explicit cursor is one you create yourself. It takes more code, but gives more control

State the differences between cursor and Procedures?

A cursor basically is a place to hold the results from a query. A cursor allows you to transverse the result set row by row. A stored procedured is a named bit of saved code that can be run from the database.

1What is normalization?

Normalization is a database design technique which organizes tables in a manner that reduces redundancy and dependency of data.It divides larger tables to smaller tables and links them using relationships.

What is Functional Dependency?

A **functional dependency** is a **constraint** between two sets of attributes in a relation from a database. In other words, functional dependency is a constraint that describes the relationship between attributes in a relation.

What is Fully Functional dependency?

The term full functional dependency (FFD) is used to indicate the minimum set of attributes in of a functional dependency (FD). In other words, the set of attributes X will be fufunctionally dependent on the set of attributes Y if the following conditions are satisfied:

- • X is functionally dependent on Y and
- • X is not functionally dependent on any subset of Y.

List different types Normal Forms?

- 1NF
- 2NF
- 3NF
- 4NF
- BCNF
- MULTIVALUED FUNCTIONAL DEPENDENCY

What is transitive property?

Same as transitive rule in algebra, if a → b holds and b → c holds, then a → c also holds. a → b is called as a functionally that determines b.