1) What is truncate statement?

Truncate is a Data definition Language (DDL Statement), Truncate removes all the records from the table permanently without affecting to the structure of the table.

Truncate is an auto commit and in Truncate we can't use where clause and truncate operation is very fast.

2) Describe the Delete statement?

Delete is a DML statement, Delete removes all the records or set of records from the table temporarily.

If we apply where clause it removes only for those specific records which satisfy the condition

If we do not apply where clause, it removes all the records from the table temporarily

3) Difference between DDL and DML statements?

DDL	DML
DDL stands for Data definition language	DML stands for Data Manipulation Language
DDL statements includes: Create, Alter, Rename, Truncate and Drop	DML statements includes : Inert, Update and Delete
DDL statements are Auto Commit	DML statements are not Auto Commit in order to save the Transaction we should use TCL statement “Commit”
DDL statements deals with structure of the table	DML statements deals with Data within the table

4) Difference between Truncate and Delete?

Truncate	Delete
Truncate is a DDL statement	Delete is a DML Statement
Truncate removes all the records from the table permanently without affecting to the structure of the table	Delete removes all the records or set of records from the table temporarily.
Truncate achieves Auto Commit	Delete is not an Auto Commit, in order to save the Transaction we should use TCL statement “Commit”
Truncate never supports Where Clause	Delete Supports where clause to delete specific records based on the Condition

5) Difference between Drop and Truncate?

Drop	Truncate
Drop is a DDL statement	Truncate is a DDL statement
Drop statement removes the whole table along with the structure of the table permanently from the Database	Truncate removes all the records from the table permanently without affecting to the structure of the table

6) What is Constraints and types of Constraints?

Constraints avoids the entry of invalid records in to the table.

Types of Constraints:

1. NOT NULL
2. UNIQUE
3. CHECK
4. PRIMARY KEY
5. FOREIGN KEY

7) Difference between Primary Key and Unique Constraints?

Primary Key	Unique
Primary key is a combination of Unique and Not Null. The Column which has applied by Primary key it never accepts duplicate records and Null records.	Unique constraint achieves record Uniqueness. The Column which has applied by Unique Constraint it never accepts duplicate records but it accepts null records for only one occurrence.
Only one Primary key can be applied per table	There can be multiple Unique constraints applied on a table

8) Difference between ON DELETE CASCADE and ON DELETE SET NULL?

ON DELETE CASCADE	ON DELETE SET NULL
ON DELETE CACADE can be applied on Foreign Key constraint	ON DELETE SET NULL can be applied on Foreign Key constraint
If a Child table applied by ON DELETE CASCADE with Foreign key Constraint, IF we delete any records from Parent table the corresponding reference from Child table removes automatically	If a Child table applied by ON DELETE SET NULL with Foreign key Constraint, IF we delete any records from Parent table the corresponding reference from Child table set to NULL

9) What is Composite Primary Key?

If we can apply one primary Key Constraint on more than one column that indicates Composite Primary Key.

Here Records Uniqueness based on the Data available in those two columns.

Example:

Alter table Student add Constraint studpk PRIMARY KEY (UNO, ROLLNO);

10) Difference between IN operator and Between Operator?

IN Operator	BETWEEN Operator
The IN operator filters the list of values	The Between Operator filters Range of Values
For each values available here are applied by OR operator	For each value it applies AND operator

11) Describe Order by Clause?

The Order By clause is used to Sort the records either ascending or descending order by default it sorts the records based on Ascending Order.

12) Describe Group by Clause?

Group by Clause is used to group the records based on aggregate functions.

The Group by Clause works based on the following two principles:

1) The Columns names which are specified in the select statement the same Column names must be provide In the Group By Clause
2) After satisfying the First Rule, The Second Rule describes "The Column names which are specified in Group By clause the same no need to specify in the Select statement"

13) What is Sub Query?

The Sub Query is also called as Nested Query, In Sub query the inner Query executes first based on the result of Inner query the Outer Query executes.

The Sub query can be applied on same table or multiple tables.

14) Difference between UNION and UNION ALL?

Union	Union All
The Union operation is used to combine the records from more than one table	The Union All operation is used to combine the records from more than one table
The Union operation returns distinct Records	The Union All operation returns duplicate Records
The Output for Union Operation is always sorted ascending Order	The Output for Union All Operation is not sorted Order

15) What is Set Operations or can we perform Set operations in SQL?

Set Operations are used to combine the records from two or more tables.

The Set Operators includes:

1. UNION
2. UNION ALL
3. INTERSECT
4. MINUS

All the operators works based on the following principles:

1. Number of Columns used in the First Query must be same as Number of columns used in second Query
2. Data Type of each columns specified in the Frist Query must match with the data types of columns specified in the second Query.

16) What is table alias?

The table alias is used to differentiate each column with respective table wise.

OR

It is used to identify the similar column names uniquely across different tables

Example:

SQL> select d.deptno,d.dname,d.loc from dept d;

17) What is JOINS?

Joins are used to join different columns from each table in order to perform joins there must be common columns or the columns which should contain common records in between two tables.

OR

Joins are used to get the result of more than one table where a common column should be present on the selected tables and need not be present in the queries.

18) What are the Types of Joins?

1) Cartesian Jon or CROSS Join
2) Inner Join or Equi Join
3) Left Join or Left Outer Join
4) Right Join or Right Outer Join

5) Full Join or Full Outer Join
6) Self Join

19) What is Cartesian Jon or CROSS Join?

Cartesian Jon or CROSS Join works based on the principle of Cartesian Product

OR

It displays all the permutation & combination of data from all the columns which are mentioned in the query.

Note: For Cartesian or Cross Join the common columns between two tables is not required.

Example:

A={1,2} B={3,4,5}

A* B = {(1,3),(1,4),(1,5),(2,3),(2,4),(2,5)}

20) What is inner Join or Equi Join?

The Inner returns matching records from both the tables based on the specified matching condition.

OR

The inner join selects all the rows from both tables as long as there is a match between the columns in both the tables

Example:

```
SQL> select e.ename,e.job,d.deptno,d.dname,d.loc from  emp e,dept d
  where e.deptno=d.deptno;
```

21) What is Left Join or Left Outer Join?

The Left join returns all the records from the left table and only matching records from the right table.

Case 1: Left join using Where Clause

Example: I would like to condider Dept as left table and emp as right table

SQL> select d.dname,d.loc,e.empno,e.ename,e.job from dept d,emp e

where d.deptno=e.deptno(+);

Case 2: Left join using ON Clause

Example: I would like to condider Dept as left table and emp as right table

SQL> select d.dname,d.loc,e.empno,e.ename,e.job from dept d LEFT JOIN emp e

ON d.deptno=e.deptno

22) What is Right Join or Right Outer Join?

The Right join returns all the records from the right table and only matching records from the Left table.

Case 1: Right join using Where Clause

Example: I would like to condider emp as left table and dept as right table

SQL> select e.empno,e.ename,e.job,d.dname,d.loc from emp e,dept d

where e.deptno(+)=d.deptno;

Case 2: Right Join using ON Clause

Example: I would like to condider emp as left table and dept as right table

SQL> select e.empno,e.ename,e.job,d.dname,d.loc from emp e RIGHT OUTER JOIN dept d

ON e.deptno=d.deptno

23) What is Full Join or Full Outer Join?

The Full join returns both matching and non-matching from the both the tables.

In other words we can describe Full Join as a UNION of Left Join and Right Join

Case 1: Full Join using On Clause

Example: I would like to condider emp as left table and dept as right table

SQL> select e.empno,e.ename,e.job,d.dname,d.loc from emp e FULL OUTER JOIN dept d

ON e.deptno=d.deptno

Case 2: Full Join using Where Clause

Example: I would like to consider emp as left table and dept as right table

In other words we can describe Full Join as Union of Left join and Right Join

```
SQL> select e.empno,e.ename,e.job,d.deptno,d.dname,d.loc from emp e,dept d
where e.deptno=d.deptno(+)
UNION
select e.empno,e.ename,e.job,d.deptno,d.dname,d.loc from emp e,dept d
Where e.deptno(+)=d.deptno
```

24) What is SELF Join?

Joining the same table itself is called a self join

OR

if we can apply Inner Join/Left Join/Right Join on same table indicates the concept of Self Join.

Case 1: IF we would like display Employee Names and their coressponding Manager Names,we have to join same emp table:

Example:

```
SQL> select e.ename "Employee",m.ename "Manager" from emp e,emp m
  where e.mgr=m.empno(+);
```

25) What is Natural Join?

Natural Join works based on the principal of Inner Join.

Example:

```
SQL> select e.empno,e.ename,d.dname,d.loc from emp e NATURAL JOIN dept d;
```

Whenever we apply Natural Join, It has to satisfy the below Rules:

1. Common columns between two tables haven't specified in the select statement.

2. Natural Join does not require matching condition

26) Can we use Where clause for Natural Join to filter the records?

Yes, We can use where clause to filter the records in Natural Join

SQL>select e.ename,e.job,d.dname,d.loc from emp e NATURAL JOIN dept d

where e.job='SALESMAN'

27) What is ANSI Join?

While joining two or more tables,if we are using "Inner Join/Left Join/Right Join" keyword along with "ON" clause that indicates ANSI Join

Example:

SQL> select e.empno,e.ename,d.dname from emp e INNER JOIN dept d

ON e.deptno=d.deptno;

28) Difference between Implicit Join and Explicit Join?

Implicit Join	Explicit Join
While joining two or more tables, if we are using where clause for providing matching condition, that indicates Implicit Join	While joining two or more tables, if we are using ON clause for providing matching condition, that indicates Explicit Join
SQL> select e.empno,e.ename,d.dname from emp e,dept d Where e.deptno=d.deptno	SQL> select e.empno,e.ename,d.dname from emp e INNER JOIN dept d ON e.deptno=d.deptno;

29) How to join tables by USING clause?

Using clause is used for joining two or more tables.

While applying USING clause we should use "Inner Join/Left Join/Right Join ..etc" keywords.

Example:

SQL> select e.empno,e.ename,d.dname from emp e INNER JOIN dept d

USING(deptno)

Whenever we apply USING clause, It has to satisfy the below Rules:

1) common columns between two tables haven't speciifed in the select statement.
2) The common column must be specify in the Using clause without specifying table alias.

OR

Using clause never accept table alias

3) Matching condition does not require in Using Clause

Example: USING (e.deptno) // it is a wrong approach

NOTE:

by applying "USING" clause we can perfrom Inner Join,Left Join,Right Join ,..etc

30) Can we perform Left Join/Right Join through "USING" clause?

Answer: yes

Example:

SQL> select d.dname,e.ename from dept d Left JOIN emp e

USING(deptno);

31) Difference between UNION and FULL JOIN/INNER JOIN/LEFT JOIN/RIGHT JOIN?

OR

Difference between Set Operations and Joins?

SET Operation	Joins
The Set Operations are used to combine records from two or more tables.	Joins are used to join different columns from each table in order to perform joins there must be common columns or the columns which should contain common records in between two tables
Common columns between two tables do not require to perform Set operations	there must be common columns between two tables required to perform the Joins

32) How to join three tables?

Implicit Join Approach:

SQL> select e.ename,d.dname,i.insurancetype from emp e,dept d,insurance i

Where e.deptno=d.deptno

and d.deptno=i.deptno;

Explicit Join Approach:

SQL> select e.ename,d.dname,i.insurancetype from emp e INNER JOIN dept d

ON e.deptno=d.deptno

INNER JOIN Insurance i

ON d.deptno=i.deptno;

By Applying "USING" clause Approach:

SQL> select e.ename,d.dname,i.insurancetype from emp e INNER JOIN dept d

USING(deptno)

INNER JOIN Insurance i

USING(deptno);

SQL> select * from Insurance;

DEPTNO	INSURANCETYPE	PROVIDER
10	CAR INSURANCE	IDIGIT
20	HOSPITAL	BAJAJ
30	AGRICULTURE	GOVT
40	HOME INSURANCE	HDFC BANK