**35. What is the difference between an inner and outer join?**  
An inner join returns rows when there is at least some matching data between two (or more) tables that are being compared.  
An outer join returns rows from both tables that include the records that are unmatched from one or both the tables.

**36. What are SQL constraints?**  
SQL constraints are the set of rules that enforced some restriction while inserting, deleting or updating of data in the databases.

Some of the constraints in SQL are – Primary Key, Foreign Key, Unique Key, SQL Not Null, Default, Check and Index constraint.

**38. What is a Unique constraint?**  
A unique constraint is used to ensure that there are no duplication values in the field/column.

**39. What is a Primary Key?**  
A PRIMARY KEY constraint uniquely identifies each record in a database table. All columns participating in a primary key constraint must not contain NULL values.

**40. Can a table contain multiple PRIMARY *KEY’s*?**

The short answer is no, a table is not allowed to contain multiple primary keys but it allows to have one composite primary key consisting of two or more columns.

**41. What is a Composite PRIMARY KEY?**  
Composite PRIMARY KEY is a primary key created on more than one column (combination of multiple fields) in a table.

**42. What is a FOREIGN KEY?**  
A FOREIGN KEY is a key used to link two tables together. A FOREIGN KEY in a table is linked with the PRIMARY KEY of another table.

**44. What is the difference between UNIQUE and PRIMARY KEY constraints?**

There should be only one PRIMARY KEY in a table whereas there can be any number of UNIQUE Keys.  
PRIMARY KEY doesn’t allow NULL values whereas Unique key allows NULL values.

**45. What is a NULL value?**  
A field with a NULL value is a field with no value. A NULLvalue is different from a zero value or a field that contains spaces. A field with a NULL value is one that has been left blank during record creation. Assume, there is a field in a table is optional and it is possible to insert a record without adding a value to the optional field then the field will be saved with a NULL value.

**46. What is the difference between NULL value, Zero, and Blank space?**  
As I mentioned earlier, Null value is field with no value which is different from zero value and blank space.  
Null value is a field with no value.  
Zero is a number  
Blank space is the value we provide. The ASCII value of space is CHAR(32).

**47. How to Test for *NULL* Values?**A field with a *NULL* value is a field with no value. *NULL*value cannot be compared with other NULL values. Hence, It is not possible to test for *NULL* values with comparison operators, such as =, <, or <>. For this, we have to use the *IS NULL* and *IS NOT* *NULL* operators.

|  |  |
| --- | --- |
| **1** | **SELECT column\_names FROM table\_name WHERE column\_name IS NULL;** |
| **1** | **SELECT column\_names FROM table\_name WHERE column\_name IS NOT NULL;** |

**48. What is SQL *NOT NULL* constraint?**

NOT NULL constraint is used to ensure that the value in the filed cannot be a NULL

**51. What is Normalization?**  
Normalization is the process of table design to minimize the data redundancy.

**52. What are all the different Normalization?**  
There are different types of Normalization forms in SQL.

* First Normal Form (1NF)
* Second Normal Form (2NF)
* Third Normal Form (3NF)
* Boyce and Codd Normal Form (BCNF)

**53. What is Denormalization?**  
Denormalization is a database optimization technique used to increase the performance of a database infrastructure. It involves in the process of adding redundant data to one or more tables. In a normalized database, we store data in separate logical tables and attempt to minimize redundant data.

**55. What is a Trigger?**  
A Trigger is a SQL procedure that initiates an action in response to an event (Insert, Delete or Update) occurs. When a new Employee is added to an Employee\_Details table, new records will be created in the relevant tables such as Employee\_Payroll, Employee\_Time\_Sheet etc.,

**60. Which TCP/IP port does SQL Server run?**  
By default, it is 1433

**65. What is the difference between Union and Union All command?**

***Union:***It omits duplicate records and returns only distinct result set of two or more select statements.  
***Union All:*** It returns all the rows including duplicates in the result set of different select statements.

Performance wise Union All is faster than Union, Since Union All doesn’t remove duplicates. Union query checks the duplicate values which consumes some time to remove the duplicate records.

|  |  |
| --- | --- |
| 1  2  3 | SELECT \* FROM Table1  UNION  SELECT \* FROM Table2 |

|  |  |
| --- | --- |
| 1  2  3 | SELECT \* FROM Table1  UNION ALL  SELECT \* FROM Table2 |
|  | **67. What is the difference between Having and Where clause?** Where clause is used to fetch data from a database that specifies particular criteria whereas a Having clause is used along with ‘GROUP BY’ to fetch data that meets particular criteria specified by the Aggregate functions. Where clause cannot be used with Aggregate functions, but the Having clause can.  **68. What are aggregate functions in SQL?** SQL aggregate functions return a single value, calculated from values in a column. Some of the aggregate functions in SQL are as follows   * AVG() – This function returns the average value * COUNT() – This function returns the number of rows * MAX() – This function returns the largest value * MIN() – This function returns the smallest value * ROUND() – This function rounds a numeric field to the number of decimals specified * SUM() – This function returns the sum   PRACTICAL QUESTION  **76. How to get unique records from a table?** By using DISTINCT keyword, we can get unique records from a table  **SELECT DISTINCT Col1, Col2 from Table1**  **77. What is the command used to fetch the first 5 characters of a string?** Some of the ways to fetch the first 5 characters of a string are as follows:  **SELECT RIGHT(EmpName,5) AS EmployeeName FROM Employee**  SELECT SUBSTRING(EmpName,1,5) AS EmployeeName FROM Employee  **79. How to add a column ‘Salary’ to a table Employee\_Details?**  **ALTER TABLE Employee\_Details ADD (Salary);**  **82. How To Get List of All Tables From A DataBase?** To view the tables available on a particular DataBase   |  |  | | --- | --- | | **1**  **2**  **3**  **4** | **USE TestDB**  **GO**  **SELECT \* FROM sys.Tables**  **GO** | |

**86. How to get each name only once from an employee table?**  
By using the DISTINCT keyword, we could get each name only once.

**SELECT DISTINCT employee\_name FROM employee\_table;**

**88. What is the order of SQL SELECT?**  
Order of SQL SELECT statement is as follows

SELECT, FROM, WHERE, GROUP BY, HAVING, ORDER BY.