

**Explicación**

The LIKE operator is used in a WHERE clause to search for a specified pattern in a column.

**Pregunta 4: Correcto**

The Product table contains the following data.

ID	Name	Quantity
1234	Spoon	33
2615	Fork	17
3781	Plate	20
4589	Cup	51

You execute the following statement:

```
1 | SELECT COUNT(*)  
2 | FROM Product WHERE Quantity > 18;
```

What is the value returned by this statement?

 1 3

(Correcto)

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Pregunta 20: **Correcto**

Data in a database is stored in:

**Stored procedures**

**Queries**

**Data tables**

(Correcto)

**Data types**

**Views**

**Explicación**

The database table is where all the data in a database is stored, and without tables, there would not be much use for relational databases. This is generally the case, but we also have what's called an indexed view. An indexed view, is a view with a clustered index, allowing data to be stored.

Pregunta 21: **Correcto**

You have a table named Student that contains 100 rows.

Some of the rows have a NULL marker in the **FirstName** column.

You execute the following statement:

`DELETE FROM Student`

What is the result?

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Pregunta 28: **Incorrecto**

Which command should you use to give a user permission to read the data in a table?

- |  |              |
|--|--------------|
| <input checked="" type="radio"/> <b>ALLOW SELECT</b> | (Incorrecto) |
| <input type="radio"/> <b>GRANT SELECT</b>            | (Correcto)   |
| <input type="radio"/> <b>LET READ</b>                |              |
| <input type="radio"/> <b>PERMIT READ</b>             |              |

**Explicación**

Use the GRANT statement to give privileges to a specific user or role, or to all users, to perform actions on database objects. Those actions can be DELETE, INSERT, REFERENCES, SELECT, UPDATE, EXECUTE and TRIGGER. If you want to give a user permission to execute all actions on database objects we can use the "ALL PRIVILEGES" keyword. The "GRANT SELECT" gives the user permission to select data on the specified database object.

Pregunta 29: **Incorrecto**

You need to populate a table named EmployeeCopy with data from an existing table named Employee.

Which statement should you use?

- |   |
|---|
| <input type="radio"/> 1   <b>SELECT * INTO EmployeeCopy<br/>2   SELECT * FROM Employee;</b> |
|---|

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Pregunta 1: **Correcto**

You need to store product names that vary from three to 30 characters.

You also need to minimize the amount of storage space that is used.

Which data type should you use?

**CHAR(30)**

**CHAR(3, 30)**

**VARCHAR(30)**

(Correcto)

**VARCHAR (3, 30)**

**Explicación**

**CHAR** is a fixed-size data type, while **VARCHAR** is variable-size data type.

Because **VARCHAR** is a variable-size data type, the storage size of the **VARCHAR** is the actual size of the data entered, not the maximum size for this column. So, even though we specify the maximum size to be 30 bytes, it doesn't have to be 30 bytes if the size of the data entered is less than 30 bytes. This however is not the case with the fixed-size **CHAR** data type. With the **CHAR** data type, the size will always be the same, regardless of the size of the data you entered.

This is not storage efficient.

Pregunta 2: **Correcto**

Which keyword would you use in a select statement to return rows that meet a specific condition?

#### Explicación

We need a query that selects all data from the Employee table and inserts the data into the EmployeeCopy table. The COPY keyword is not a valid DML keyword, neither is the SELECT \* INTO a correct DML syntax.

#### Pregunta 30: Incorrecto

Select all the following statements that are true:

(Choose all that apply)

- |   |              |
|---|--------------|
| <input checked="" type="checkbox"/> <b>Multiple primary keys can be added to a table.</b>   | (Incorrecto) |
| <input type="checkbox"/> <b>A single INSERT statement can be used to add rows to multiple tables.</b>                                   |              |
| <input type="checkbox"/> <b>Indexes should only be created on columns that are frequently searched.</b>                                 | (Correcto)   |
| <input checked="" type="checkbox"/> <b>A self-reference arises when a foreign key constraint references a column in the same table.</b> | (Correcto)   |

#### Explicación

To improve performance of query execution, indexes should be strategically added to columns that are frequently searched. A **self referencing table** is a **table** where the primary key on the **table** is also defined as a foreign key on the same table.

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#### Explicación

A primary key is a special relational database table column (or combination of columns) designated to uniquely identify all table records.

A primary key's main features are: It must contain a unique value for each row of data and it cannot contain null markers.

#### Pregunta 23: Incorrecto

Which two of the following statements are true?

**The third normal form (3NF) ensures that all non-key attributes are fully functionally dependent on the primary key**

**In the first normalized form (1NF), the data is in an entity format, which basically means that the following three conditions must be met:**

the table must have no duplicate records,

(Correcto)

the table must not have multi-valued attributes,

and the entries in the column or attribute must be of the same data type.

**The fourth normal form (4NF) revolves around removing multi-valued dependencies.**

(Correcto)

**The second normal form (2NF) checks for transitive dependencies. A transitive dependency is similar to a partial dependency in that they both refer to attributes that are not fully dependent on a primary key.**

(Incorrecto)

#### Explicación

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ProductID	ProductName	Color1	Color2	Color3
4545	Shirt	Blue	Green	Purple

You break the table into the following two tables.

ProductID	ProductName
4545	Shirt

ProductID	Color
4545	Blue
4545	Green
4545	Purple

This process is referred to as:

Fragmentation

Normalization

(Correcto)

Denormalization

Defragmentation

#### Explicación

Database Normalization is a technique of organizing the data in the database. Normalization is a systematic approach of decomposing tables to eliminate data redundancy(repetition) and undesirable characteristics like Insertion, Update and Deletion Anomalies. It is a multi-step process that puts data into a tabular form, removing duplicated data from the relation tables.

A unique constraint allows the database administrator to specifically identify which column should not contain duplicate values.

(Incorrecto)

A check constraint allows the administrator to limit the types of data a user can insert into the database.

#### Explicación

A foreign key constraint in one table points to a primary key in another table, and does not uniquely identify each record.

The primary key constraint uniquely identifies each record in a database table. The primary key must contain unique values and it cannot contain NULL values. Each table should have a primary key, and each table can have only one primary key.

#### Pregunta 10: Correcto

Which key uniquely identifies a row in a table?

Foreign Key

Superkey

Primary key

(Correcto)

Local

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You have a table named Employee that includes the following columns:

1 | EmployeeID  
2 | EmployeeName

Which statement should you use to return the number of rows in the table?

**SELECT COUNT(rows) FROM Employee**

**SELECT SUM(\*) FROM Employee**

**SELECT COUNT(\*) FROM Employee** (Correcto)

**SELECT \* FROM Employee**

#### Explicación

The COUNT(\*) function returns the total number of records in a table. If a WHERE clause exists, it returns the total number of rows that satisfy the WHERE clause conditions.

Pregunta 9: **Incorrecto**

Which of the following statements is **not** true?

A default constraint is used to insert a default value into a column. If no other value is specified, the default value will be added to all new records.

The foreign key constraint uniquely identifies each record in a database table. (Correcto)

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command after which the name of the table containing the data is specified. In our example, it is the **Order** table.

The **WHERE** clause in this example is used to filter the scope of the Delete action.

`DELETE FROM Order` => this would delete all the orders (all the rows in the **Order** table)

`DELETE FROM Order WHERE CustomerID = 209` => this deletes only the orders placed by a customer with the ID 209

#### Pregunta 12: Correcto

You need to establish a set of permissions that you can routinely assign to new users.

What should you create?

<input type="radio"/> Resource	
<input type="radio"/> Group	
<input checked="" type="radio"/> Role	(Correcto)
<input type="radio"/> List	

#### Explicación

A role is created to ease setup and maintenance of the security model. It is a named group of related privileges that can be granted to the user.

#### Pregunta 13: Incorrecto

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You have the following table definition

```
1 | CREATE TABLE Road
2 | (
3 |     RoadID INTEGER NOT NULL,
4 |     DISTANCE INTEGER NOT NULL
5 | );
```

The road table contains the following data:

RoadID	Distance
1234	22
1384	34

You execute the following statement:

```
INSERT INTO Road VALUES (1234, 36)
```

What is the result?

An error stating that duplicate IDs are not allowed

A syntax error

(Incorrecto)

A new row will be added

(Correcto)

An error stating that NULL values are not allowed

#### Explicación

The table does not contain a primary key or a unique key constraint in the table definition. Since data for both fields is supplied, the row will be added without an error.

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ID	Name	Quantity
1234	Apples	33
2615	Oranges	0
3781	Pears	29
4589	Plums	

You execute the following statement:

```
SELECT Name FROM Product WHERE Quantity IS NOT NULL
```

How many rows are returned?

1

2

4

3

(Correcto)

0

#### Explicación

There are three rows that have a defined value for the Quantity column and one row that has no value defined (NULL marker) for the Quantity column.

So, if I run a query to get the rows, where there is a defined value (NOT NULL), I will get a result-set containing 3 rows.

The **quantity column has a numerical data type**. For text-related data types (nchar/nvarchar/char/varchar) it's understandable that you could have "" (empty text) saved, this does not symbolize a NULL marker (unknown value or empty field), it's just an empty string.

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ALLOW

#### Explicación

Run the GRANT EXECUTE command on a procedure to allow a user to execute a procedure

#### Pregunta 16: Incorrecto

One reason to create a stored procedure is to:

Improve performance

(Correcto)

Minimize storage space

(Incorrecto)

Bypass case sensitivity requirements

Give the user control of the query logic

#### Explicación

Stored procedures are compiled once and stored in executable form, so procedure calls are quick and efficient. Executable code is automatically cached and shared among users. This lowers memory requirements and invocation overhead. By grouping SQL statements, a stored procedure allows them to be executed with a single call. This minimizes the use of slow networks, reduces network traffic, and improves round-trip response time. OLTP (Online Transaction Processing) applications, in particular, benefit because result set processing eliminates network bottlenecks.

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### Pregunta 17: Correcto

You execute the following statement:

```
1 | SELECT DepartmentName FROM Department
2 | WHERE DepartmentID =
3 |   (SELECT DepartmentID FROM Employee
4 |     WHERE EmployeeID = 1234);
```

This statement is an example of a/an:

Outer join

Union

Subquery

(Correcto)

Cartesian product

### Explicación

A subquery is an SQL query within a query. Subqueries are nested queries that provide data to the enclosing query. Subqueries can usually be identified by multiple nested SELECT statements.

### Pregunta 18: Correcto

You have the following table definition:

```
1 | CREATE TABLE Product (
2 |   ID INTEGER PRIMARY KEY,
3 |   Name VARCHAR(20),
4 |   Quantity INTEGER
5 | );
```

The table contains the following data:

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Pregunta 14: **Incorrecto**

How many clustered indexes can a table have?

3

(Incorrecto)

2

1

(Correcto)

4

**Explicación**

When you begin implementing indexes, it is important to remember that each table can have only one clustered index that defines how SQL Server will sort the data stored inside it, because that data can be sorted in only one way.

Pregunta 15: **Incorrecto**

Which permission does a user need in order to run a stored procedure?

CALL

EXECUTE

(Correcto)

RUN

(Incorrecto)

ALTER

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All rows containing a NULL value in the FirstName column will be deleted.

You will receive an error message.

All rows and the table definition will be deleted.

All rows in the table will be deleted.

(Correcto)

#### Explicación

When using the DELETE command without a WHERE clause or criteria, all records from the table will be removed.

#### Pregunta 22: Incorrecto

Which constraint ensures a unique value in the ID column for each customer?

PRIMARY KEY

(Correcto)

DISTINCT

SEQUENTIAL KEY

FOREIGN KEY

(Incorrecto)

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Pregunta 25: **Correcto**

You have two tables. Each table has three rows.

How many rows will be included in the Cartesian product of these two tables?

0

6

9

(Correcto)

3

**Explicación**

The Cartesian product defines each possible combination of rows between sets. Since there are two tables and three rows, the outcome of the Cartesian product will be  $3 \times 3 = 9$ .

The **Cartesian product** is the mathematical name for the **Cross Join**.

Pregunta 26: **Correcto**

Which command should you use to remove a table from a database?

DELETE TABLE

UPDATE TABLE

REMOVE TABLE

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**Since it's a numerical data type, you only have two options,**

You could have a **number**, or you could have a **NULL marker** (unknown value or empty field).

Unlike text, you cannot add "" (empty text) to the quantity column. **There has to be a number to be NOT NULL.** If there is no number, then the Quality field has no value defined, therefore the field has a **NULL marker**.

So, if I run a query to get the rows, where there is a defined value (NOT NULL), I will get a result-set containing 3 rows.

#### Pregunta 19: **Correcto**

The component that holds information for a single entry in a table is called a:

**Row**

(Correcto)

**View**

**Column**

**Data type**

#### **Explicación**

In relational databases, a row is a data record within a table. Each row, which represents a complete record of specific item data, holds different data within the same structure. A row is occasionally referred to as a tuple or an entry.

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WHERE (Correcto)

UNION

ORDER BY

FROM

#### Explicación

The WHERE clause is used to filter records. The WHERE clause is used to extract only those records that fulfill a specified condition.

#### Pregunta 3: Incorrecto

You are writing a select statement to find every product whose name contains a specific character.

Which keyword should you use in the where clause?

BETWEEN

LIKE (Correcto)

INCLUDES (Incorrecto)

FIND

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Interpreting the query, we select the number of records where the quantity is greater than 18. Only 3 records satisfy this condition, thus returning a value of 3.

#### Pregunta 5: **Correcto**

You have a Customer table and an Order table. You join the Customer table with the Order table by using the CustomerID column.

The results include:

- 1 | All customers **and** their orders
- 2 | Customers who have **no** orders

Which type of join do these results represent?

**Complete join**

**Outer join**

(Correcto)

**Inner join**

**Partial join**

#### Explicación

It is most likely an **OUTER JOIN**, specifically a **LEFT OUTER JOIN**. The LEFT JOIN command returns all records from the left table (Customer), and the matched records from the right table (Order). The result is NULL on the right side if there are no matched records. This will list all customers, whether they placed orders or not.

The **INNER JOIN** only returns the associated data between both tables. As a result, the query would only retrieve data about the customers who have placed orders, leaving out the customers who haven't placed orders.

There is no such thing as a complete or partial join.

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REMOVE TABLE

DROP TABLE

(Correcto)

#### Explicación

The DROP TABLE statement is used to drop an existing table in a database.

#### Pregunta 27: Correcto

You are writing an SQL statement to retrieve rows from a table.

Which Data Manipulation Language (DML) command should you use?

OUTPUT

GET

SELECT

(Correcto)

READ

#### Explicación

The **SELECT** command retrieves data from a database. The data is returned in a table-like structure called a result-set.

In newer classifications the **SELECT** command is seen as a **Data Query Language (DQL)** command, instead of a **DML**-command.

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The second normal form (2NF) ensures that all non-key attributes are fully functionally dependent on the primary key

The third normal form (3NF) checks for transitive dependencies. A transitive dependency is similar to a partial dependency in that they both refer to attributes that are not fully dependent on a primary key.

Therefore, the only correct answers can be that of the 1st Normal form and that of the 4th Normal form.

#### Pregunta 24: Incorrecto

Which keyword can be used in a create table statement?

GROUP BY

UNIQUE

(Correcto)

DISTINCT

ORDER BY

(Incorrecto)

#### Explicación

When creating a table we make use of the **DDL** (Data Definition Language) to define the definition of the table. This means that only DDL related commands can be used. This includes defining column data types, properties, constraints and so on.

The UNIQUE keyword is used to create a **unique key constraint** on one or more columns, when defining the definition of the table.

The other options are commands used when selecting data (**SELECT** statements)

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### Explicación

A primary key is a special relational database table column (or combination of columns) designated to uniquely identify all table records.

A primary key's main features are: It must contain a unique value for each row of data and it cannot contain null markers. The Unique key could also be used for uniquely identifying rows within a table.

### Pregunta 11: Correcto

A database contains two tables named Customer and Order.

You execute the following statement:

```
1 | DELETE FROM Order  
2 | WHERE CustomerID = 209
```

What is the result?

All orders for CustomerID 209 are deleted from the Order table. (Correcto)

All orders for CustomerID 209 are deleted from the Order table, and CustomerID 209 is deleted from the Customer table.

The first order for CustomerID 209 is deleted from the Order table.

CustomerID 209 is deleted from the Customer table.

### Explicación

The query deletes all the orders from the order table where the CustomerID = 209.

```
1 | DELETE FROM Order  
2 | WHERE CustomerID = 209
```

The **DELETE** command initiates the Delete statement. We then specify the **FROM**

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Pregunta 6: **Incorrecto**

You need to enable a new employee to authenticate at your database.

Which command should you use?

**CREATE USER**

(Correcto)

**ADD USER**

**ALTER USER**

**ALLOW USER**

**INSERT USER**

(Incorrecto)

**Explicación**

You would need to create a new user to **authenticate** at the **database**, which means the new user will not be related to any logins in the **master** database.

Based on the type of authentication there are two create user statements:

`CREATE USER <username> WITH PASSWORD = '<password>';` (Connecting Through SQL Server Authentication ) and

`CREATE USER [<Name of the Computer or Domain>\<username>];` (Connecting Through Windows Authentication)

Pregunta 7: **Correcto**

You have a table that contains the following data.

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- INSERT \* FROM Employee INTO EmployeeCopy;** (Incorrecto)
- 1 | INSERT INTO EmployeeCopy  
2 | SELECT \* FROM Employee; (Correcto)
- 1 | COPY \* INTO Employee  
2 | SELECT \* FROM Employee

#### Explicación

We need a query that selects all data from the Employee table and inserts the data into the EmployeeCopy table. The COPY keyword is not a valid DML keyword, neither is the SELECT \* INTO a correct DML syntax.

#### Pregunta 30: Incorrecto

Select all the following statements that are true:

(Choose all that apply)

- Multiple primary keys can be added to a table.** (Incorrecto)
- A single INSERT statement can be used to add rows to multiple tables.**
- Indexes should only be created on columns that are frequently searched.** (Correcto)
- A self-reference arises when a foreign key constraint references a column in the same table.** (Correcto)

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