Section One

1.

With phone table

Graphical user interface, application

Description automatically generated

With Customer Table

Graphical user interface, text, application

Description automatically generated

2.

Table

Description automatically generated with medium confidence

Customer table after populating the values.

Table

Description automatically generated

3.

Graphical user interface, text, application, email

Description automatically generated

1. As we enforced the constraints, each row on table customer either must reference to one of the rows on phone table or must have value zero. In all other case, it won’t be able to references to phone table that is why it throws error. In our case, I am trying to reference row number 6 of customer table to row number 8 of the phone table, but there is no row number 8 on phone table that is why it threw error.
2. While creating phone and customer table we made a rule to be followed by each entry into the customer table.As error says it violates foreign key constraint named ‘customer\_phone\_fk’ and further says ‘Key (phone\_id)=(8) is not present in table "phone"’. What is that means is the row we are trying to insert into the customer table cannot referenced to row number 8 of phone table because row 8(phone\_id=8) is not existed in phone table.

4.

List of phone that have Customers are :

Graphical user interface, text, application

Description automatically generated

And list of customers that have phone:

Graphical user interface, application

Description automatically generated

Full join table looks like this

Graphical user interface, application, Word

Description automatically generated

While inserting value into the table, we made a rule that first phones from phone table won’t have customer and first customer from customer table won’t have phone. That is why some row on phone table and some row on customer table were not listed. Also, in real world some phones are in stock and not purchased yet that is why all phones are not assigned to customers and vice versa.

5.

Graphical user interface, application

Description automatically generated

Second kind of join with same result.

Graphical user interface, application, Teams

Description automatically generated

6.

Graphical user interface, application, Word

Description automatically generated

Second kind of join with same result.

Graphical user interface, application, Word

Description automatically generated

7.

Graphical user interface, table

Description automatically generated

8.

Graphical user interface, application, Word, Teams

Description automatically generated

9.

Graphical user interface, application, Word

Description automatically generated

10.

Graphical user interface, application, Word

Description automatically generated

11.

Answer- for AND operation, result of the operation is true if both operands are true otherwise result will be false.

* true AND true = true
* true AND false = false
* false AND true = false
* false and false = false

while in case of OR operation, result of operation will be false if both operands are false otherwise result will be true.

* true OR true = true
* true OR false = true
* false OR true = true
* false OR false = false
  1. **(true AND false) OR (false AND true)**

From above expression,

-true AND false = false

-false AND true = false

That is why,

-false or false =false

Therefore (true AND false) OR (false AND true) = false

* 1. **(true OR true) AND NOT(false OR true) AND (true AND true)**

From above expression,

Simplifying expression inside parentheses first,

-true OR true = true

-false OR true = true

-true AND true = true

Now, above expression will be

=(true) AND NOT (true) AND (true)

=true AND false AND true # because NOT (true) ->false

=false AND true # because true AND false -> false

=false ->final answer

* 1. **NOT ((false OR false) AND NOT(true AND true) AND (true OR false))**

Simplifying expression inside parentheses first,

-false OR false -> false

-true AND true ->true

-true OR false - > true

Now above expression will be,

NOT((false) AND NOT (true) AND (true))

=NOT (false AND NOT (true) AND true)

=NOT (false AND false AND true)

=NOT (false AND true) # combining underlined operands first

=NOT (false)

=true -> final answer

12.

a.

Graphical user interface, application, Teams

Description automatically generated

b.

For a deluxe phone, following criteria must be met

price is between $750 to $1000

release date is on or after 01-Jul-2020

phone model is either GalaxyS21+ or Xenos 360.

Graphical user interface, application, Teams

Description automatically generated

13.

a. store will be selling all their phone prices greater than $400 in reduce price. Reduced price will be $75 less than its original price.

write a query that lists out the name of all Phones, along with their regular and reduced prices.

Graphical user interface, application

Description automatically generated

13.b

Criteria of high-end phone are:

-Price must be greater than $ 700

-Release date on or later than 05/19/2020

Graphical user interface, text, application, email

Description automatically generated

Altered table

Table

Description automatically generated

List of high-end phones

Graphical user interface, application

Description automatically generated

List of NOT high-end phones

Graphical user interface, application, table

Description automatically generated

Instead of Boolean value we can also use text to categorize the data based on their value by using union without altering table as below

Graphical user interface, application

Description automatically generated