**Task 01: [DDL] [5 Marks]**

1. Create the following tables for a Sales System. You must give meaningful names to all the constraints.

|  |  |  |
| --- | --- | --- |
| Table | **Supplier** |  |
| **Col Name** | **Data Type** | **Constraints** |
| Supplier\_ID | NUMBER (5) | Primary Key |
| S\_name | VARCHAR2 (20) |  |
| City | VARCHAR2 (30) |  |
| Phone | CHAR (16) | Unique |

1. Update Table Product and add following cols to it.
   1. Stock INT Default 0
   2. Supplier\_ID INT Foreign key reference Suppliers

**Task 02: [DDL] [15 Marks]**

1. View the structure of customer table.

**Describe customer**

1. Alter table customer and add phone field in it. *VARCHAR2 (10)*

**alter table customer add phone varchar2(10)**

1. Alter table customer and
   1. Apply NOT NULL constraint on city field.

**alter table customer modify city varchar2(30) not null**

* 1. Apply NOT NULL constraint on c\_name field.

**alter table customer modify c\_name varchar2(30) not null**

* 1. Change the size of c\_name field to 25 characters.

**alter table customer modify c\_name varchar2(25)**

1. Alter table invoice and add Primary Key constraint on inv\_no.

**alter table invoice add constraint invoice\_pk primary key(inv\_no)**

1. Alter table invoice\_details and add foreign constraint on p\_no referencing product.

**alter table invoice\_details add constraint p\_no\_fk foreign key(p\_no) references product(p\_no)**

1. Alter table product and change the name of the column price to cost\_price.

**alter table product rename column price to cost\_price;**

1. Alter table product and modify the constraint on cost\_price filed to >=10.

**alter table product modify cost\_price number (5) check (cost\_price >= 10)**

1. View all the constraints of above given table.

**select \* from user\_constraints where table\_name = [table\_name]**

1. Disable the NOT NULL constraint on p\_name of product table.

**alter table product modify p\_name varchar2(30)**

1. Alter table product and enable the NOT NULL constraint on p\_name.

**alter table product modify p\_name varchar2(30) not null**

1. Alter table customer\_copy to make it a read only table.

**alter table customer\_copy read only**

1. Change the name of customer\_copy table to customer\_backup.

**alter table customer\_copy rename to customer\_backup**

1. Write to generic queries to change name of a table.

**Alter [table] rename to [new name]**

**Rename [table] to [new name]**

1. Drop tables All\_in\_one and customer\_backup.

**Drop table all\_in\_one;**

**Drop table customer\_backup**

1. Viva Voice
   1. Difference between Drop, Truncate, Delete, and cascade
   2. Difference between structured and unstructured database

**Task 03: [DML] [10 Marks]**

1. Insert a new supplier into the Suppliers table with the following details:

**Supplier ID: 1001**

**Supplier Name: ABC Corporation**

**Address: 123 Main Street, Anytown, USA**

**Phone: 987-654-3210**

1. Insert a new customer into the Customer table with the following details:

**Customer Number: 1001**

**Customer Name: John Doe**

**City: New York**

**CNIC: 1234567890123456**

**Phone: 1234567890**

**After insertion, query the Customer table to verify that the data has been added correctly.**

1. Insert a new product into the Product table with the following details:

**Product Number: 2001**

**Product Name: Laptop**

**Cost Price: 1500**

**Stock: 50**

**Supplier ID: 1001**

**After insertion, query the Product table to verify that the data has been added correctly.**

1. Insert a new invoice into the Invoice table with the following details:

**Invoice Number: 3001**

**Invoice Date: (current date)**

**Customer Number: 1001**

**Payment Method: Cash**

**After insertion, query the Invoice table to verify that the data has been added correctly.**

1. Insert a new entry into the Invoice\_Details table with the following details:

**Invoice Number: 3001**

**Product Number: 2001**

**Quantity: 2**

**Sale Price: 1600**

**After insertion, query the Invoice\_Details table to verify that the data has been added correctly.**

**Additional Tasks to Check Constraints:**

1. Try to insert a new customer with a duplicate CNIC and see if the UNIQUE constraint is enforced.
2. Attempt to insert a new product with a price below 5 and see if the check constraint is enforced.
3. Try to insert a new invoice without specifying the customer number and see if the FOREIGN KEY constraint is enforced.
4. Attempt to update a customer's city to NULL and see if the NOT NULL constraint is enforced.
5. Attempt to modify the cost price of a product to a value less than 5 and see if the CHECK constraint is enforced.