**Question – 1:**

**Create a table for product information: Write a query to create a table**

**named Products with the following fields:**

* **product\_id (Integer, Primary Key)**
* **product\_name (Varchar, 50)**
* **category (Varchar, 30)**
* **price (Decimal, 10, 2)**
* **stock\_quantity (Integer)**

**Add a column to an existing table: You have an existing table**

**Customer\_Details. Write a query to add a new column email to the table**

**with a maximum length of 50 characters.**

**Modify an existing column in a table: You need to modify the**

**phone\_number column in the Customer\_Details table to increase its**

**length from 15 to 20 characters. Write the query to do this.**

**Delete records from a table: Write a query to delete all records from the**

**Products table where the stock\_quantity is less than 5.**

**Drop a table from the database: Write a query to delete (drop) the**

**entire Orders table from the database, assuming this table contains**

**order details.**

**1. Create a Table for Product Information**

CREATE TABLE Products (

product\_id INTEGER PRIMARY KEY,

product\_name VARCHAR(50),

category VARCHAR(30),

price DECIMAL(10, 2),

stock\_quantity INTEGER

);

**2. Add a Column to an Existing Table**

ALTER TABLE Customer\_Details

ADD email VARCHAR(50);

**3. Modify an Existing Column in a Table**

ALTER TABLE Customer\_Details

MODIFY phone\_number VARCHAR(20);

**4. Delete Records from a Table**

DELETE FROM Products

WHERE stock\_quantity < 5;

**5. Drop a Table from the Database**

DROP TABLE Orders;

**Question – 2:**

**Create a table for employee information: Write a query to create a table**

**named Employees with the following fields:**

* **employee\_id (Integer, Primary Key)**
* **first\_name (Varchar, 30)**
* **last\_name (Varchar, 30)**
* **department (Varchar, 30)**
* **salary (Decimal, 10, 2)**
* **date\_of\_joining (Date)**

**Alter a table to add a new column: The Orders table currently does not**

**track shipment status. Write a query to add a new column**

**shipment\_status (Varchar, 20) to track whether the order is "Shipped",**

**"Pending", or "Delivered".**

**Delete specific records from a table: You have a table Employees where**

**some employees have not been active for a long time. Write a query to**

**delete all employees whose date\_of\_joining is before '2015-01-01' and**

**whose salary is less than 3000.**

**Modify an existing column in a table: You have a Products table where**

**the price column needs to have a higher precision to account for**

**discount rates. Write a query to modify the price column from**

**DECIMAL(10,2) to DECIMAL(12,4).**

**1. Create a Table for Employee Information**

CREATE TABLE Employees (

employee\_id INTEGER PRIMARY KEY,

first\_name VARCHAR(30),

last\_name VARCHAR(30),

department VARCHAR(30),

salary DECIMAL(10, 2),

date\_of\_joining DATE

);

**2. Alter a Table to Add a New Column**

ALTER TABLE Orders

ADD shipment\_status VARCHAR(20);

**3. Delete Specific Records from a Table**

DELETE FROM Employees

WHERE date\_of\_joining < DATE '2015-01-01'

AND salary < 3000;

**4. Modify an Existing Column in a Table**

ALTER TABLE Products

MODIFY price DECIMAL(12, 4);

**Question – 3:**

**Create a table for order details: Write a query to create a table named**

**Order\_Details with the following fields:**

* **order\_id (Integer, Primary Key)**
* **customer\_id (Integer, Foreign Key referencing Customer\_Details)**
* **product\_id (Integer, Foreign Key referencing Products)**
* **order\_date (Date)**
* **quanrity (Integer)**

**Alter a table to modify an existing column: The Employee table has a**

**column department which is currently of type Varchar(30). You want to**

**increase the length to 50 characters. Write a query to alter the**

**department column to Varchar(50).**

**Delete specific records based on a condition: You have a table Orders**

**that records customer orders. Write a query to delete all orders where**

**the order\_date is before '2020-01-01'.**

**Drop a column from an existing table: The Customer\_Details table**

**contains an unnecessary column middle\_name. Write a query to drop**

**the middle\_name column from the Customer\_Details table.**

**1. Create a Table for Order Details**

CREATE TABLE Order\_Details (

order\_id INTEGER PRIMARY KEY,

customer\_id INTEGER,

product\_id INTEGER,

order\_date DATE,

quantity INTEGER,

FOREIGN KEY (customer\_id) REFERENCES Customer\_Details(customer\_id),

FOREIGN KEY (product\_id) REFERENCES Products(product\_id)

);

**2. Alter a Table to Modify an Existing Column**

ALTER TABLE Employees

MODIFY department VARCHAR(50);

**3. Delete Specific Records Based on a Condition**

DELETE FROM Orders

WHERE order\_date < DATE '2020-01-01';

**4. Drop a Column from an Existing Table**

ALTER TABLE Customer\_Details

DROP COLUMN middle\_name;

**Question – 4:**

**Create a table for atendance records: Write a query to create a table**

**named Atendance with the following fields:**

* **atendance \_id (Integer, Primary Key)**
* **employee\_id (Integer, Foreign Key referencing Employees)**
* **atendance \_date (Date)**
* **status (Varchar(10), 'Present' or 'Absent')**
* **remarks (Varchar(100))**

**Alter a table to rename a column: The Order\_Details table has a column**

**quantity which should be renamed to order\_quantity. Write a query to**

**rename the quantity column to order\_quantity.**

**Delete duplicate records from a table: You have a Customer\_Details**

**table that contains duplicate customer names. Write a query to delete**

**duplicate rows based on the customer\_name column, keeping only one**

**record for each customer.**

**Add a Foreign Key constraint to an existing table: The Products table**

**currently has no relation to the Supplier table. Write a query to add a**

**foreign key constraint supplier\_id (Integer) to the Products table,**

**referencing the supplier\_id from the Suppliers table.**

**1. Create a Table for Attendance Records**

CREATE TABLE Attendance (

attendance\_id INTEGER PRIMARY KEY,

employee\_id INTEGER,

attendance\_date DATE,

status VARCHAR(10) CHECK (status IN ('Present', 'Absent')),

remarks VARCHAR(100),

FOREIGN KEY (employee\_id) REFERENCES Employees(employee\_id)

);

**2. Alter a Table to Rename a Column**

ALTER TABLE Order\_Details

RENAME COLUMN quantity TO order\_quantity;

**3. Delete Duplicate Records from a Table**

To delete duplicate rows based on the customer\_name column while keeping only one record for each customer, you can use a common table expression (CTE) with the ROW\_NUMBER() function:

WITH CTE AS (

SELECT customer\_id, customer\_name,

ROW\_NUMBER() OVER (PARTITION BY customer\_name ORDER BY customer\_id) AS rn

FROM Customer\_Details

)

DELETE FROM Customer\_Details

WHERE customer\_id IN (

SELECT customer\_id

FROM CTE

WHERE rn > 1

);

**4. Add a Foreign Key Constraint to an Existing Table**

ALTER TABLE Products

ADD CONSTRAINT fk\_supplier

FOREIGN KEY (supplier\_id)

REFERENCES Suppliers(supplier\_id);

**Question – 5:**

**Create a table for project assignments: Write a query to create a table**

**named Project\_Assignments with the following fields:**

* **assignment\_id (Integer, Primary Key)**
* **project\_id (Integer, Foreign Key referencing Projects)**
* **employee\_id (Integer, Foreign Key referencing Employees)**
* **role (Varchar(50))**
* **start\_date (Date)**
* **end\_date (Date)**

**Alter a table to set a column as NOT NULL: The Customer\_Details table**

**currently allows null values for the phone\_number column. Write a**

**query to alter the phone\_number column so that it cannot accept null**

**values.**

**Delete records based on a JOIN condition: You have a Products table**

**and a Suppliers table. Write a query to delete all products from the**

**Products table that are supplied by a supplier located in 'New York',**

**using a join with the Suppliers table.**

**Drop a table from the database: The Attendance table is no longer**

**needed. Write a query to drop the Attendance table from the database.**

**1. Create a Table for Project Assignments**

CREATE TABLE Project\_Assignments (

assignment\_id INTEGER PRIMARY KEY,

project\_id INTEGER,

employee\_id INTEGER,

role VARCHAR(50),

start\_date DATE,

end\_date DATE,

FOREIGN KEY (project\_id) REFERENCES Projects(project\_id),

FOREIGN KEY (employee\_id) REFERENCES Employees(employee\_id)

);

**2. Alter a Table to Set a Column as NOT NULL**

ALTER TABLE Customer\_Details

MODIFY phone\_number VARCHAR(20) NOT NULL;

**3. Delete Records Based on a JOIN Condition**

DELETE FROM Products

WHERE product\_id IN (

SELECT p.product\_id

FROM Products p

JOIN Suppliers s ON p.supplier\_id = s.supplier\_id

WHERE s.location = 'New York'

);

**4. Drop a Table from the Database**

DROP TABLE Attendance;