CDAC Mumbai
PG-DAC Aug25 Batch (Kharghar)
Lab Exam
Module 4: Database Technology

Time: 1:30hrs **Marks: 30**

Instructions:

- All queries must be written using MySQL command prompt only.
- Ensure to use correct syntax and test your queries before submission.
- Marks are distributed as per the sub-questions.
- Mention the table structures, relationships, and logic in your queries.

Section A: (10 Marks)

1. (4 Marks)
   Create at least three tables (Flowers, Customers, Suppliers) and insert a minimum of five records into each table. Define the column specifications appropriately.

   Flowers Table:

   - FlowerID (INT, PRIMARY KEY, AUTO_INCREMENT) o FlowerName (VARCHAR(100), NOT NULL)
   - FlowerType (VARCHAR(50), NOT NULL) -- E.g., Rose, Tulip, Lily
   - PricePerStem (DECIMAL(8,2), NOT NULL)
   - SupplierID (INT, FOREIGN KEY REFERENCES Suppliers(SupplierID))

   Customers Table:

   - CustomerID (INT, PRIMARY KEY, UTO_INCREMENT) o FirstName (VARCHAR(50), NOT NULL)
   - LastName (VARCHAR(50), NOT NULL)
   - ContactNumber (VARCHAR(15), NOT NULL, UNIQUE)

   Suppliers Table:

   - SupplierID (INT, PRIMARY KEY, AUTO_INCREMENT) o SupplierName (VARCHAR(100), NOT NULL)
   - ContactEmail (VARCHAR(100), UNIQUE, NOT NULL)

2. (2 Marks)
   Write SQL queries to create foreign key relationships between the Flowers and Suppliers tables.
3. (2 Marks)
   Write a query to fetch all flowers that are either 'Roses' or have a price per stem greater than 100.
4. (2 Marks)
   Write a query to fetch the first 5 records from the Flowers table.

Section B: Intermediate SQL Queries (10 Marks)

5. (2 Marks)
   Write a query to display the FlowerName and PricePerStem of the most expensive flower.
6. (2 Marks)
   Write a query to create a view named FlowerSummary that shows the FlowerName, FlowerType, and PricePerStem from the Flowers table. Update the price of a flower through this view and ensure the change reflects in the base table.
7. (2 Marks)
   Write a query to perform a LEFT JOIN between Flowers and Suppliers, retrieving all flowers and their respective suppliers, even if some flowers don't have an associated supplier.
8. (2 Marks)
   Write a query to create a temporary table showing flowers with the type 'Tulip'. Drop the temporary table after use.
9. (2 Marks)
   Write a stored procedure named GetFlowerDetails that takes a FlowerID as an input parameter and returns the FlowerName and PricePerStem of that flower.

Section C: Advanced SQL Queries (10 Marks)

10. (2 Marks)
    Write a MySQL program using a WHILE loop to count the total number of flowers available in stock, subtracting sold flowers from the total stock.
11. (2 Marks)
    Write a stored function named ORDER_TOTAL_CALC that takes two parameters: FlowerID and Quantity. The function should return the total cost based on the price per stem and the quantity ordered.
12. (2 Marks)
    Write a query to find suppliers who supply more than 3 different types of flowers using the HAVING clause.
13. (2 Marks)
    Write a trigger that logs any changes made to the price of a flower in a PriceLog table whenever the price is updated in the Flowers table.
14. (2 Marks)
    Write a subquery to find the FlowerName and PricePerStem of the second most expensive flower in the Flowers table.