Department of Computer Science and Engineering,
Anna University, Chennai- 600025
CS23401 – Database Management Systems (R 2023)
Practical
Jan- May 2023
Year/Sem/Batch: II/IV/ P

Exercise: 06	SQL Queries	29 – Jan - 2026

Observation (5 Marks)

1. Distinguish between **NATURAL JOIN** and **INNER JOIN** with suitable syntax.
2. Explain how **SELF JOIN** is used to represent hierarchical relationships in a table.
3. What are **updatable views**? Mention the conditions required for a view to be updatable.
4. How does a **stored function** differ from a stored procedure in terms of usage and return value?
5. Explain the role of **SAVEPOINT** in transaction management.

Execution (15 Marks)

(Create appropriate tables such as EMPLOYEE, DEPARTMENT, STUDENT, SUBJECT, EXAM, RESULT, LOG with suitable keys and constraints.)

1. Display **employee ID, employee name, and department name** using **NATURAL JOIN** *(Department_ID must be common in both tables)*.
2. Using **SELF JOIN**, display **employee name and immediate supervisor name** *(Supervisor_ID refers to Employee_ID)*.
3. Display **student name and subject name** using **NATURAL JOIN** where students have appeared for the exam.
4. Create a **VIEW** named Exam_Result_View that displays *(Student_Name, Subject_Name, Marks, Exam_Date)*.
5. Retrieve students from the view who have scored **between 60 and 80**.
6. Modify marks of a student through the view and verify the change in the base table.
7. Create a **FUNCTION** that returns **Performance Level** (Excellent, Good, Average, Poor) based on marks.
8. Display **student name, marks, and performance level** using the function.
9. Create a **BEFORE UPDATE trigger** on the RESULT table to **block reduction of marks**.
10. Create an **AFTER INSERT trigger** on the EXAM table to automatically insert a record into an EXAM_LOG table with timestamp.
11. Insert multiple records into the STUDENT table and create a **SAVEPOINT**.
12. Update subject marks of a student, then **ROLLBACK TO SAVEPOINT**.
13. Delete a student record and permanently apply the change using **COMMIT**.
14. Using **VIEW + NATURAL JOIN + FUNCTION**, display **student name, subject name, marks, and performance level**.
15. Update exam marks, verify trigger execution, and finalize the transaction using **COMMIT**.

Spot (5 Marks)

1. Write a SQL query using **SELF JOIN** to list employees who report to the **same supervisor**.
2. Write a SQL query using a **VIEW** to display students who scored **above the class average**.
3. Write SQL commands to demonstrate **SAVEPOINT and ROLLBACK TO SAVEPOINT**.
4. Write a SQL query using **NATURAL JOIN** to display subject-wise highest marks.
5. Write a SQL query to display **student name and performance level** using a **JOIN and user-defined FUNCTION**.