



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**.