PART 1 — Stored Procedure Questions

Q1. Create & Call Procedure

Write a stored procedure `GetEmployeeInfo` that takes an employee ID as input and returns the employee's name, department, and salary from a table `Employees(emp_id, name, dept, salary)`.

Q2. Insert Using Procedure

Write a procedure `AddNewProduct` that inserts a new row into the table `Products(pid, pname, price, category)` using input parameters.

Q3. Update Using Procedure

Create a procedure `UpdateSalary` that increases the salary of all employees in a given department by a percentage (passed as parameter).

Q4. Procedure With Output Parameter

Write a procedure `CountStudentsByDept` that takes department name as input and returns (output parameter) the number of students from that department.

Q5. Procedure With IF / CASE

Write a procedure `CheckStock` that takes a product ID and prints:

- "In Stock" if quantity > 0
- "Out of Stock" otherwise

Table: `Inventory(pid, quantity)`.

PART 2 — Recursion (Recursive CTE) Questions

Q6. Recursive CTE: Print 1 to N

Write a recursive CTE that prints numbers from 1 to a given input `N`.

Q7. Recursive Employee Hierarchy

Given a table:

```
Employees(emp_id, name, manager_id)
```

Write a recursive CTE to display the full hierarchy starting from the CEO (manager_id = NULL).

Q8. Factorial Using Recursive CTE

Write a recursive CTE to calculate the factorial of a number N.

Q9. Sum of Numbers (Recursive CTE)

Write a recursive CTE that calculates the sum of all integers from 1 to N and displays the final sum.

Q10. Recursive Parent–Child Listing

Table:
`Categories(cat_id, cat_name, parent_id)`

Write a recursive CTE to list all subcategories under a given category.

PART 3 — Ranking Functions (ROW_NUMBER, RANK, DENSE_RANK)

Q11. ROW_NUMBER Example

Given table: `Sales(emp_id, amount)`
Write a query using `ROW_NUMBER()` to list employees ranked by sales amount (highest first).

Q12. RANK() Example With Ties

Using the `Sales` table, display employees with their ranking using `RANK()` so that ties receive the same rank.

Q13. DENSE_RANK() Example

Using the same table, rank employees using `DENSE_RANK()` and show how it differs from `RANK()`.

Q14. Top 3 Salaries Using Ranking

Given `Employees(emp_id, name, salary)`
Use `ROW_NUMBER()` to display the **top 3 highest salaried employees**.

Q15. Partitioned Ranking

Given table:
`Marks(student_id, subject, score)`
Write a query to rank students **within each subject** using `RANK()`.