# MySQL Practice Questions (Up to Triggers)

## 1. Basic SELECT & Filtering

1. 1. Retrieve all columns from the employees table.
2. 2. Select only first\_name and last\_name from employees.
3. 3. Show employees whose salary is greater than 50,000.
4. 4. Find employees hired between 2020-01-01 and 2023-12-31.
5. 5. Display employees whose department is either "HR" or "IT".
6. 6. Retrieve employees whose name starts with 'A'.
7. 7. List employees whose commission is NULL.

## 2. Sorting & Limiting

1. 8. List employees ordered by salary in descending order.
2. 9. Retrieve the top 5 highest-paid employees.
3. 10. Show employees ordered by department and then by hire date.

## 3. Aggregate Functions & GROUP BY

1. 11. Find the total salary paid to all employees.
2. 12. Count how many employees are in each department.
3. 13. Find the average salary in the company.
4. 14. Show departments having more than 5 employees.
5. 15. Retrieve the minimum and maximum salary for each job title.

## 4. Joins

1. 16. Perform an INNER JOIN between employees and departments to list employee names with their department names.
2. 17. Use a LEFT JOIN to list all employees and their assigned projects (even if some don’t have projects).
3. 18. Use a RIGHT JOIN to list all projects and employees working on them.
4. 19. Use a CROSS JOIN to produce all combinations of employees and projects.
5. 20. Perform a SELF JOIN to find employees who have the same manager.

## 5. Subqueries

1. 21. Find employees earning more than the average salary.
2. 22. Retrieve departments where the highest salary exceeds 100,000.
3. 23. List employees whose salary matches any salary in the managers table.
4. 24. Find employees who are not assigned to any project using a subquery.

## 6. Set Operations

1. 25. Use UNION to combine current and former employees.
2. 26. Use UNION ALL to include duplicates when combining tables.

## 7. DML (INSERT, UPDATE, DELETE)

1. 27. Insert a new employee record into employees.
2. 28. Update the salary of an employee with employee\_id=101.
3. 29. Delete employees who resigned before 2022.
4. 30. Insert multiple rows in a single INSERT statement.

## 8. DDL (CREATE, ALTER, DROP)

1. 31. Create a table called projects with project\_id, name, and budget.
2. 32. Alter the projects table to add a start\_date column.
3. 33. Rename the projects table to company\_projects.
4. 34. Drop the company\_projects table.

## 9. Constraints & Keys

1. 35. Create a departments table with a PRIMARY KEY on dept\_id.
2. 36. Add a FOREIGN KEY in employees referencing departments(dept\_id).
3. 37. Add a UNIQUE constraint on employees.email.
4. 38. Create a table with a CHECK constraint ensuring salary > 0.
5. 39. Add a DEFAULT value for the status column as 'Active'.

## 10. Indexes & Views

1. 40. Create an index on employees(last\_name).
2. 41. Drop the index created above.
3. 42. Create a view high\_salary\_employees showing employees earning > 80,000.
4. 43. Update a view to include department information.

## 11. Transactions

1. 44. Begin a transaction to insert a new order and update stock; then ROLLBACK.
2. 45. Commit a transaction after inserting multiple rows.

## 12. Stored Procedures & Functions

1. 46. Create a stored procedure to get employees by department ID.
2. 47. Create a function to calculate annual salary based on monthly salary.
3. 48. Call the stored procedure and pass a parameter for department ID.

## 13. Triggers

1. 49. Create a trigger to update an audit table whenever an employee’s salary is updated.
2. 50. Create a trigger to prevent deleting a department if employees are still assigned.