**SQL Assignment (22nd November)**

1. Retrieve all employees in the IT department.

Ans->

SELECT E.FirstName, E.LastName

FROM Employees E

JOIN Departments D ON E.DepartmentID = D.DepartmentID

WHERE D.DepartmentName = 'IT';

2. Find employees hired after 2010.

Ans->

SELECT FirstName, LastName, HireDate

FROM Employees

WHERE HireDate > '2010-01-01';

3. List projects with a budget exceeding $80,000.

Ans->

SELECT ProjectName, Budget

FROM Projects

WHERE Budget > 80000;

4. Sort employees by their hire date in descending order.

Ans->

SELECT FirstName, LastName, HireDate

FROM Employees

ORDER BY HireDate DESC;

5. Show projects sorted by their budget in ascending order.

Ans->

SELECT ProjectName, Budget

FROM Projects

ORDER BY Budget ASC;

6. Count the number of employees in each department.

Ans->

SELECT D.DepartmentName, COUNT(E.EmployeeID) AS NumberOfEmployees

FROM Employees E

JOIN Departments D ON E.DepartmentID = D.DepartmentID

GROUP BY D.DepartmentName;

7. Display the top 3 employees with the highest base salary.

Ans->

SELECT FirstName, LastName, BaseSalary

FROM Employees E

JOIN Salaries S ON E.EmployeeID = S.EmployeeID

ORDER BY BaseSalary DESC

LIMIT 3;

8. Retrieve employee names along with their department names.

Ans->

SELECT E.FirstName, E.LastName, D.DepartmentName

FROM Employees E

JOIN Departments D ON E.DepartmentID = D.DepartmentID;

9. List all assignments, including employee and project details.

Ans->

SELECT E.FirstName, E.LastName, P.ProjectName, A.HoursWorked

FROM Assignments A

JOIN Employees E ON A.EmployeeID = E.EmployeeID

JOIN Projects P ON A.ProjectID = P.ProjectID;

10. Find employees working on the project with the highest budget.

Ans->

SELECT E.FirstName, E.LastName

FROM Assignments A

JOIN Employees E ON A.EmployeeID = E.EmployeeID

JOIN Projects P ON A.ProjectID = P.ProjectID

WHERE P.Budget = (SELECT MAX(Budget) FROM Projects);

11. Calculate the age of each employee.

Ans->

SELECT FirstName, LastName,

TIMESTAMPDIFF(YEAR, DateOfBirth, CURDATE()) AS Age

FROM Employees;

12. Calculate the total salary (base + bonus) for each employee.

Ans->

SELECT E.FirstName, E.LastName, (S.BaseSalary + IFNULL(S.Bonus, 0)) AS TotalSalary

FROM Employees E

JOIN Salaries S ON E.EmployeeID = S.EmployeeID;

13. Find all employees hired in 2015.

Ans->

SELECT FirstName, LastName, HireDate

FROM Employees

WHERE YEAR(HireDate) = 2015;

14. Retrieve the names of projects ending before December 2023.

Ans->

SELECT ProjectName, EndDate

FROM Projects

WHERE EndDate < '2023-12-01';

15. List employees with base salaries greater than $70,000.

Ans->

SELECT E.FirstName, E.LastName, S.BaseSalary

FROM Employees E

JOIN Salaries S ON E.EmployeeID = S.EmployeeID

WHERE S.BaseSalary > 70000;

16. Count the number of projects handled by each employee.

Ans->

SELECT E.FirstName, E.LastName, COUNT(A.ProjectID) AS NumberOfProjects

FROM Employees E

JOIN Assignments A ON E.EmployeeID = A.EmployeeID

GROUP BY E.EmployeeID;

17. List all departments located in "San Francisco".

Ans->

SELECT DepartmentName

FROM Departments

WHERE Location = 'San Francisco';

18. Display project names along with total hours worked on each.

Ans->

SELECT P.ProjectName, SUM(A.HoursWorked) AS TotalHoursWorked

FROM Assignments A

JOIN Projects P ON A.ProjectID = P.ProjectID

GROUP BY P.ProjectName;

19. Find the highest bonus received by any employee.

Ans->

SELECT MAX(Bonus) AS HighestBonus

FROM Salaries;

20. Identify projects that lasted for more than 12 months.

Ans->

SELECT ProjectName, DATEDIFF(EndDate, StartDate) AS DurationInDays

FROM Projects

WHERE DATEDIFF(EndDate, StartDate) > 365;

21. Retrieve all projects starting in 2023.

Ans->

SELECT ProjectName, StartDate

FROM Projects

WHERE YEAR(StartDate) = 2023;

22. Calculate the total hours worked by each employee across all projects.

Ans->

SELECT E.FirstName, E.LastName, SUM(A.HoursWorked) AS TotalHoursWorked

FROM Employees E

JOIN Assignments A ON E.EmployeeID = A.EmployeeID

GROUP BY E.EmployeeID;

23. Find the department with the most employees.

Ans->

SELECT D.DepartmentName

FROM Departments D

JOIN Employees E ON D.DepartmentID = E.DepartmentID

GROUP BY D.DepartmentID

ORDER BY COUNT(E.EmployeeID) DESC

LIMIT 1;

24. List employees who were born before 1985.

Ans->

SELECT FirstName, LastName, DateOfBirth

FROM Employees

WHERE DateOfBirth < '1985-01-01';