Midterm Exam: Database Management Systems Total Marks: 20

Schema for All Questions

- **Employees(emp_id, emp_name, designation, salary, dept_id)**
- **Departments(dept_id, dept_name, location)**
- **Projects(proj_id, proj_name, dept_id, budget)**
- **Assignments(emp_id, proj_id, hours_worked)**

Part A – Basic SQL (5 Marks)

1. (3 marks) Write an SQL statement to **create the `Departments` table** with:
    - `dept_id` (Primary Key)
    - `dept_name` (NOT NULL)
    - `location` (Default = 'Dhaka')
2. (3 marks) Insert a record into `Departments` for: Department 101, "IT", "Chattogram".
3. (3 marks) Retrieve all employees who earn **more than 50,000**.
4. (3 marks) Display all distinct job **designations** from `Employees`.
5. (3 marks) Delete all employees working in department 103.

Part B – Intermediate SQL (10 Marks)

6. (4 marks) Display the `emp_name`, `dept_name`, and `location` for all employees.

7. (4 marks) List all employees who are **not assigned** to any project.

8. (4 marks) Find the **average salary** of employees in each department. Show only departments with an average salary greater than **60,000**.

9. (4 marks) Display the `proj_name` and **total hours worked** by all employees on that project.

10. (4 marks) List all employees whose salary is greater than the **average salary of their own department**.

Part C – Applied Query (5 Marks)

11. **Scenario:** The management wants to identify departments working on high-budget projects.

Question:
Write an SQL query to show:

- `dept_name`
- **number_of_projects** in that department
- **total_budget** of those projects

Show only departments having more than **2 projects** and a total budget above **5,000,000**, ordered by `total_budget` in **descending** order.