**PMAS Arid Agriculture University Rawalpindi**

**University Institute of Information Technology**

**Final Term Examination-Spring-2023**

**BSCS/BSSE II- Morning & Evening**

**Database Systems CSC-103**

**(Practical)**

**Total Time: 45 Minutes**  **Maximum Points: 20**

**Q1:** Draw and Discuss Database architecture for your class project. **8 Marks**

**Q2:** Consider the table and answer SQL queries given below. **6 Marks**

**Teacher Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Teacher\_id (P.K) | Teacher\_Name | Salary (U.K) | Teacher\_Subject | Teacher\_city |
| 1 | Ali | 30,000 | Math | Peshawar |
| 2 | Ahmed | 45,000 | English | Lahore |
| 3 | Kashif | 60,000 | Computer | Islamabad |
| 4 | Bilal | 75,000 | Science | Multan |
| 5 | Nazeer | 90,000 | Physics | Peshawar |

1. Create indexes for all columns in a teacher table.
2. Create a simple view to display all rows in a teacher table.
3. How can you insert a new teacher with the following details into the table?

Teacher\_ID: 6 Teacher\_Name: "Sana" Salary: 55,000 Teacher\_Subject: "Biology" Teacher\_City: "Lahore"

1. How do you modify the Teacher\_Subject of the teacher named "Ali" to "Chemistry"?
2. How can you update the salary of the teacher named "Ali" to the average salary of all teachers in the same city as "Ali"?
3. Can you provide an example of a scenario where a rollback query would be necessary?

**Q3:** Write SQL queries for the statements below. **6 Marks**

1. To find the highest salary in the teacher table.
2. Write query to retrieve teacher name, minimum salary from teacher in each city.
3. Write query to retrieve city, total salary from teacher in each city where total salary is less than 50000.

**Good Luck**