

**National University of Computer and Emerging Sciences**  
**Lahore Campus**

**Question #3: Attempt all parts of the questions. Also, Write commands to execute your answer correctly if needed.** **Marks [10]**

- g) Write a query to find the DoctorName , Designation that have less salary in comparison to highest Nurse 's salary of Cancer Department. [5]
- h) Write a query to find all patients who have appointments with Doctor ID = 3. [2]
- i) Write a query to retrieve the NurseID , NurseName of nurses who are on Night shift in the "Cardiology" department. [Night shifts starts from 20:00 to 8:00] [3]

**Question #4: Attempt all parts of the questions. Also, Write commands to execute your answer correctly if needed.** **Marks [35]**

- j) Write a trigger to automatically update the NumberOfRooms in the Department table whenever a new NurseShift is added. [10]
- k) The Hospital administrator wants to keep track of nurse shifts and ensure that no department is understaffed. Whenever a nurse's shift is added, updated, or deleted, the administrator needs an automatic update of the current number of nurses per department to manage staffing levels efficiently. Write a trigger that updates a summary table, DepartmentNurseCount, which stores the DepartmentID, deptName, and the current count of nurses (NurseCount) for each department. [15]
- l) Create a trigger named AuditNurseSalaryChange that will be fired after any update to the salary in the Nurse table. [10]
  - a) The trigger should insert a record into a table called NurseSalaryHistory with the NurseID, the old salary, and the new salary.
  - b) Assume the NurseSalaryHistory table has already been created with the appropriate columns.

**Question # 5: Attempt all parts of the questions. Also, Write commands to execute your answer correctly if needed.** **Marks [5x1 =5]**

- m) Write a command to create a new table 'Medications' with appropriate fields and constraints.
- n) Write a DML command to insert multiple new nurses in a single command.
- o) Write a DML command to update the address of a patient to default value '123 St 1,A town, USA' if null .
- p) Write a command such that the start\_time of Nurse shift cannot exceed end\_time. ( 24 hr format)
- q) Write a constraint statement that will delete the records of nurse shifts and department assigned automatically if the nurse has been removed.

## Database Systems Lab

Date: 23<sup>rd</sup> May, 2024

Sections : BCS , BSE

## Final Exam

Total Time (Hrs): 2hr 30  
mins

Total Marks: 80

Total Questions: 5

Do not write below this line.

22L-7947

Roll No

BSSE-442

Section

Ukham

Student Signature

### Instructions for Students and Invigilator:

1. You have to submit the question paper with **your name, roll no written** on it. Invigilator kindly make sure to **collect all question paper back** from Students.
2. Make a folder named as your **Roll\_no\_Section**. Place **Sql files , Text Files and Screenshots** of your answer in it .
3. Submit your folder on Submission path on Xeon. I.e. **Xeon\Spring 2024\DB Lab Final\Your Section\your Lab sub\_Section** for example : **Xeon\Spring 2024\DB Lab Final\42\421 submissions**.
4. In case of any issue, make assumption and mention it in comments.
5. **Plagiarism and Cheating are strictly prohibited.**

**Question #1: Attempt all parts of the questions. Also, Write commands to execute your answer correctly if needed.**

**Marks [10]**

- a) Create a view to show all departments with their number of rooms. [3]
- b) Create a view to list nurses and their shift timings. [2]
- c) Create a view named DoctorPatientAppointment that displays the following information: [5]
  - a) Additionally, sort the results by the appointment time in ascending order.
  - b) The view should only include appointments scheduled for the March 2021.
  - c) Doctors name, patient;s name, department name, and appointment time.

**Question #2: Attempt all parts of the questions. Also, Write commands to execute your answer correctly if needed.**

**Marks [20]**

- d) Create a stored procedure named **UpdateNurseSalary** that takes two input parameters: NurseID and NewSalary. [10]
  - a) If no nurse with the given NurseID exists, return an error message.
  - b) If the update is successful, return a message indicating the salary has been updated.
  - c) The procedure should update the salary of the nurse with the given NurseID to the NewSalary.
- e) Write a stored procedure that takes DepartmentID and returns the total number of doctors and Nurses in that department. [4]
- f) Write a stored procedure to schedule an appointment, which inserts a new record into the Appointment table. Ensure the doctor and patient IDs exist before scheduling, if they don't exist raise error. [6]