United International University (UIU)

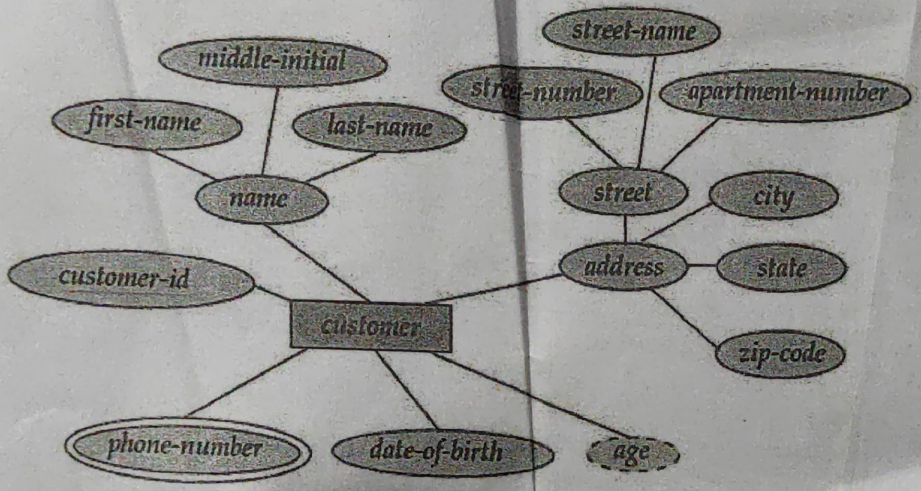
Dept. of Computer Science & Engineering (CSE)

Mid Term Exam Trimester: Fall 2021 Marks: 30 Time: 1 hr 45 mins

Course Code: CSE 3521/CSI 221

Course Title: Database Management Systems

Answer **ALL** of the following questions:

1	Draw the corresponding Relational Schema for the following ER-Diagram. 	4
2	Consider the following scenario: A university is organized into different departments. Each department has a unique department name. The university also stores the opening date, floor no and the phone numbers of the department. Many students get admitted to a department and faculties work for a department. Students get a unique student id and their name, date of birth and age is also stored. The name consists of the first name and the last name of a student. A student pays his/her fees and the fee date is stored. Students can select one student to be their batch leader. Courses have their unique course name and the credit hours, number of sections and the type of the course are stored. Students can enroll in several courses and the trimester name is stored for each enrollment. For each fee, it gets a fee number and the amount gets stored. The fee number cannot uniquely identify each fee but can be uniquely identified for each student.	8

3		8

Table name	Column names
Student	id (PK), name, dept_name (FK), course_id (FK), total_credit
Department	dept_name (PK), building, budget
Instructor	id (PK), name, dept_name (FK), salary
Course	course_id (PK), title, dept_name (FK), credits
Section	section_id (PK), course_id (FK), semester, building, room_no, time

Write down the SQL queries for the following statements:

a. Find the names of all departments.
b. Find the names of all instructors in the History department.
c. Find all courses taught either in Fall 2020 or in Spring 2021 Semester, or both.
d. Find the names of all students who have taken at least one Computer Science course.

4	a. Briefly describe different types of keys in DBMS. b. Briefly explain mapping cardinalities in DBMS.	2 2
5	Consider the following relational schema: *Professor (profname, deptname)* *Department (deptname, building)* *Committee (profname, commname)* a. Find all the professors and the committee they are working on. b. Find the number of committees where each professor is working on. c. Find all the professors who do not involve with any committee.	6