Subject Code- CSE-201 Enrollment No. A1305220069

MID TERM EXAMINATION-September 2022

Database Management System

Time: 01 Hr **Maximum marks: 30**

Note: Attempt questions as per Instructions

SECTION-A (Attempt any two questions out of three, Each of 05 Marks)

Q.1. Explain the difference between external, internal, and conceptual schemas. How are these different schema layers related to the concept of logical and physical data impendence.

Q.2. Explain the concept and importance of "Referential Integrity Constraint". Also explain the foreign key and its association with primary keys.

Q.3. List functions and services of DBMS. Also List limitations of file-based system over DBMS.

SECTION-B (Attempt any One question, out of two, Each of 10 Marks)

Q.1. Design a relational database for a university registrar's office. The office maintains data about each class, including the instructor, the number of students enrolled, and the time and place of the class meetings. For each student-class pair, a grade is recorded.

Q.2. Consider the following relational database schema consisting of the four relation schemas:

passenger (pid, pname, pgender, pcity)
agency (aid, aname, acity)
flight (fid, fdate, time, src, dest)
booking (pid, aid, fid, fdate)

Answer the following questions using **Tuple Relational Calculus and Domain Relational Calculus:**

P. T. O

a) Get the complete details of all flights to New Delhi.
b) Get the details about all flights from Chennai to New Delhi.
c) Find only the flight numbers for passenger with pid 123 for flights to Chennai before 06/11/2022.

SECTION-C (Compulsory, 10 Marks)

Q.1. Consider the following relational database where the primary keys are underlined.

employee (*person-name*, *street*, *city*)

works (*person-name*, *company-name*, *salary*)

company (*company-name*, *city*)

manages (*person-name*, *manager-name*)

Give an expression in the **relational algebra** and **SQL** to express each of the following

queries:

a. Find the names of all employees who work for "AMITY".
b. Find the names and cities of residence of all employees who work for "AMITY".
c. Find the names, street address, and cities of residence of all employees who work for "AMITY" and earn more than `100,000 per annum.
d. Find the names of all employees in this database who live in the same city as the company for which they work.
e. Find the names of all employees in this database who do not work for "AMITY".