H Roll No. .....

TBC–401

B. C. A. (FOURTH SEMESTER)
MID SEMESTER EXAMINATION, 2021

DATABASE MANAGEMENT SYSTEMS

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any ***one*** of the sub-questions.

(ii) Each question carries 10 marks.

1. (a) Explain schema architecture in detail and explain how data independence is achieved through it ?

10 Marks (CO1 & CO2)

OR

(b) What is sub class and super class in EER model ? Explain the attribute inheritance with an example. 10 Marks (CO1 & CO2)

P. T. O.

(a) A university registrar's office maintains data about the following entities :

(i) courses, including number, title, credits, syllabus and perquisites.

(ii) course offerings, including course number, year, semester, section number, instructor(s), timings and classroom.

(iii) students, including student-id, name and program.

(iv) instructors, including identification number, name, department, and title.

Further, the enrollment of students in courses and grades awarded to students in each course they are enrolled for must be appropriately modelled. Construct an E-R diagram for the registrar's office. Document all assumptions that you make about the mapping constraints.

10 Marks (CO2)

OR

(b) What are integrity constraints ? How do you implement these constraints in SQL ?

10 Marks (CO2)

3. (a) What is Super Key ? Differentiate between Primary key and Candidate key with examples. 10 Marks (CO2)

OR

(b) What is Generalization ? Explain with suitable example. 10 Marks (CO2)

4. (a) Explain DDL and DML and enlist DDL and DML commands.

10 Marks (CO1 & CO2)

OR

(b) What is Aggregation ? Explain with suitable example. 10 Marks (CO1 & CO2)

5. (a) Write a short note on relational algebra. Explain Selection and Projection operation in relational algebra.

10 Marks (CO1 & CO2)

OR

(b) Discuss the difference between DBMS and File processing system in detail.

10 Marks (CO1 & CO2)