(vi) Tuple

(vii) Weak entity

(viii) Super key

(ix) Primary key

(x) Candidate key

OR

(b) Consider a relation EMPLOYEE(emp_no, ename, job, mgr, hiredate, sal, comm., deptno) and DEPT(deptno, dname, location). Write the SQL queries for the following : 10 Marks (CO3)

(i) List the number of employees working with the company.

(ii) List the employee name, job, department no. of all employees whose name starts with 'A'.

(iii) List the name of employees whose salary is greater than ₹ 50,000 but less than ₹ 1,00,000.

(iv) List the name of employees who are not manager.

(v) List the name of employees who have joined the company before October 2021.

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TCS–503

B. TECH. (CSE) (FIFTH SEMESTER) MID SEMESTER EXAMINATION, 2022

DATABASE MANAGEMENT SYSTEM

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) How would you define the term DBMS ? What are the advantages of DBMS over file based approach ? 10 Marks (CO1)

OR

(b) Describe the three schema architecture and explain the need of mapping between schema levels. 10 Marks (CO1)

2. (a) What is the purpose of E-R diagram ? Explain the different E-R modeling styles and the symbols used in each style. 10 Marks (CO2)

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OR

(b) Construct an E-R diagram for a flight database that stores details about an airline's fleet, flights and seat bookings. Consider the following requirements list :

The airline has one or more airplanes.

An airplane has a model number, a unique registration number, and the capacity to take one or more passengers.

An airplane flight has a unique flight number, a departure airport, a destination airport, a departure date and time, and an arrival date and time.

Each flight is carried out by a single airplane.

A passenger has given names, a surname, and a unique e-mail address.

A passenger can book a seat on a flight.

Make assumption if necessary.

10 Marks (CO2)

3. (a) Define the term constraint. Explain the following constraints with syntax :

10 Marks (CO1)

(i) Primary key

(ii) Foreign Key

(iii) Check

(iv) Null

(v) Not Null

(vi) Unique

(vii) Default

OR

(b) Explain the following with their advantages and disadvantages :

10 Marks (CO1)

(i) Hierarchical database model

(ii) Network database model

(iii) Relational database model

4. (a) Explain the terms generalization, specialization and aggregation.

10 Marks (CO1)

OR

(b) Define data independence and classification of data independence.

10 Marks (CO1)

5. (a) Write short notes on the following :

10 Marks (CO3)

(i) Domain

(ii) Composite Attribute

(iii) Degree of a table

(iv) Schema

(v) Data dictionary