Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY
Winter Examination-2022

Subject Name : Database Management System

Subject Code : 5CS01CDM1 **Branch: M.C.A.**

Semester : 1 **Date : 14/03/2023** **Time : 10:30 To 1:00** **Marks : 70**

Instructions:
(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

SECTION – I

Q.-1 Attempt following. **7**

a) Define RDBMS. 1
b) List examples of DBMS Applications. 1
c) Define weak entity. 1
d) Define derived attribute. Give example of it. 1
e) What is Relation Instance? 1
f) Draw symbol used for *Select* and *Outer Join* operation in Relational algebra? 1
g) Give list of data types of SQL. 1

Q.-2 Attempt following. **14**

a) What is Normalization? Explain with example 1NF, 2NF, 3NF. 7
b) Discuss advantages and disadvantages of DBMS. 7

OR

a) Define anomaly. Discuss different types of anomalies in DBMS. 7
b) Discuss relational algebraic general operations with its symbols. 7

Q.-3 Attempt following. **14**

a) What is Transaction? Explain TCL commands with examples. 7
b) Define constraint. Why we use it in DBMS? Explain Primary key, and Foreign key constraint with example. 7

OR

a) Discuss concept of Functional Dependency in normalization. 7
b) Write a short note on: Query processor and storage manager. 7

SECTION – II

Q.-4 Attempt following. **7**

a) List different types of database users. 1
b) Write relational algebraic query for following. 1
Find Customer name who are working in *Sales* department.
[Note: Use Customer (cno, cname, deptname, salary).]
c) Define functional dependency. 1
d) Define Grant and Revoke. 1
e) Define privilege. List different types of privileges. 1
f) What is cardinality? 1
g) Discuss LIKE operator of SQL. 1

Q.-5 Attempt following. **14**

a) Define join. Explain inner and outer join in SQL with suitable example. 7
b) What is sub-query? Why we use it? Explain all types of sub queries. 7

OR

a) What is data model? Explain different types of data models. 7
b) Draw and explain E-R Diagram of online shopping system. 7

Q.-6 Attempt following. **14**

a) Write a note on: Index and View. 7
b) Write a SQL Query for following tables.
Emp(eno, ename, city)
Dept(eno, deptno, deptname, salary)
1) Find employee name who obtain highest salary. 3
2) Count number of employee department wise. 2
3) Find all employee name of *PURCHASE* department. 2

OR

a) Write a SQL Query for following tables.
Student (rollno, sname, dept_name, CPI)
Work (rollno, task_id)
Project (task_id, task_name)
1) List students name with their rollno and task name. 4
2) Find students name who are assign task_name ‘Testing’ 3
b) Explain generalization, specialization and aggregation with examples. 7