

GUJARAT TECHNOLOGICAL UNIVERSITY
M.Sc Integrated – SEMESTER – II - EXAMINATION – SUMMER 2023

Subject Code: 1320502**Date: 26/06/2023****Subject Name: Database Management System****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (A) Define following terms. (03)**
i) Data Abstraction.
ii) Instance.
iii) Data independence.
- (B) Explain Selection and Projection relational algebra operation with Example. (04)**
- (C) Explain specialization and generalization feature of ER diagram with example. (07)**
- Q.2 (A) Explain aggregation operation of E-R Diagram. (03)**
- (B) What is Data Definition Language? List DDL statements and explain anyone with an example. (04)**
- (C) Explain in details three level architecture of database system. (07)**
- OR**
- (C) Draw E – R Diagram for Library Management System and covert into set of table schema. (07)**
- Q.3 (A) Explain Instance and Schema in detail. (03)**
- (B) Write short note on query processing. (04)**
- (C) List and explain DML statements with suitable SQL example. (07)**
- OR**
- Q.3 (A) What is transaction? What are the functions of commit and rollback? (03)**
- (B) Write short note on Stored Procedures. (04)**
- (C) What is integrity constraint? List and Explain different types of constraints. (07)**
- Q.4 (A) Explain B-trees database storage strategies. (03)**
- (B) Explain various Normal forms up to 2NF. (04)**
- (C) Write Relational Algebra syntax for the following queries. (07)**
Employee(eno, ename, salary, designation)
Customer(cno, cname, address, city)
1) Find out name of employees who are 'Manager'.
2) Retrieve Employee records whose salary is less than 20,000.
3) Find out name of employees who are also customers.
4) Find out name of person who are employees but not customers
- OR**
- Q.4 (A) List DCL statements and explain anyone with an example. (03)**
- (B) What is view? Explain different type of view with an example. (04)**
- (C) What is join? List and explain various types of joins. (07)**
- Q.5 (A) Describe Grant and Revoke commands with suitable example. (03)**
- (B) List and explain types of locks in transactions. (04)**

(C) Consider following schema and represent given statements in relational algebra form. (07)

Branch(branch_name,branch_city)

Account(branch_name, acc_no, balance)

Depositor(Customer_name, acc_no)

(i) Find out list of customer who have account at 'abc' branch.

(ii) Find out all customer who have account in 'Ahmedabad' city and balance is greater than 10,000.

(iii) Find out list of all branch name with their maximum balance

OR

Q.5 (A) List and explain TCL with suitable example. (03)

(B) Explain cursor and its type with suitable example. (04)

(C) List and explain ACID properties with respect to Database transaction. (07)
