

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA-SEMESTER-I-EXAMINATION-SUMMER-2025

Subject Code: MB01096021**Date: 03/06/2025****Subject Name: Relational Database Management System****Time: 02:30 PM TO 05:30 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of simple calculators and non-programmable scientific calculators are permitted.

Q. No	Question Text and Description	Marks
Q.1	Define the following terms: (a) Database (b) TCL (c) Multivalued Attribute (d) Normalization (e) BCNF (f) Commit (g) Views	14
Q.2	(a) What is File Organization? Discuss different types of file organization. List the problems associated with file organization.	07
	(b) Discuss DBMS architecture with Data independence.	07
	OR	
	(b) Explain Database Language in detail with its categories and list of commands in each category.	07
Q.3	(a) What is ER-Diagram? Discuss Entity and Entity-set with an example.	07
	(b) What are attributes? Discuss different types of it. Also, differentiate properties from attributes.	07
	OR	
Q.3	(a) What is a Relationship? Discuss cardinalities between Relations with an example of each.	07
	(b) What is Integrity? What is Referential Integrity? Explain it with an example.	07
Q.4	(a) What is Functional Dependency? Discuss its types.	07
	(b) What is Canonical Cover? Find Canonical cover for the following functional dependencies. R (VWXYZ) $V \rightarrow W$ $VW \rightarrow X$ $Y \rightarrow VXZ$	07
	OR	
Q.4	(a) Explain the Super key, Candidate key, and Primary key with examples. Also, find a Candidate key from the given relation.	07

R (ABCDEF)

AB -> C

C -> D

D -> BE

E -> F

F -> A

- (b) What is 3rd Normal Form? Check whether the following relation is in the 3rd NF or Not. If it is not in 3NF then normalize the relation in the 3NF. **07**

R (A, B, C, D, E, F, G, H, I)

AB -> C

BD -> EF

AD -> GH

A -> I

- Q.5** [A] Write SQL statements to create the following tables with given constraints: **07**

BRANCH_MASTER (B_NO, B_NAME, LOCATION) , here B_NO is primary key.

CUSTOMER_MASTER (C_NO, C_NAME, GENDER, DOB, CITY, CONTACT_NO) ,here C_NO is primary key.

ACCOUNT_MASTER(ACC_NO, ACC_TYPE, B_NO, C_NO, OPEN_DATE, CURR_BALANCE) ,here B_NO and C_NO is Foreign key and ACC_NO is Primary Key.

- [B] Perform the following SQL queries on the table: **07**

1. List all branch names where the branch number is 1 or 3.
2. Display the number of customers whose account type is saving.
3. Display customer name whose curr_balance is between 3000 to 5000 while location is SURAT.
4. List all accounts opened before a certain date, along with the customer details:
5. Retrieve customers who have not Fixed deposit account:
6. Apply a constraint to the GENDER field so customers can only enter 'Male' or 'Female'.
7. Write a query to insert a record in the CUSTOMER_MASTER table.

OR

- Q.5** (a) Write SQL statements to create the following tables with given constraints: **07**

CUSTOMER(CID,CNAME,CCITY,DOB) ,here CID is Primary key.

PRODUCT(PID,PNAME,PCOST,PPROFIT) ,here PID is Primary key.

SALE_DETAIL(CID,PID,SALE,SALE_DATE): Here, CID and PID are foreign keys as well as composite primary key.

- (b) Perform the following SQL queries on the table:
1. Display details of products having maximum sales.
 2. Display the names of the customer in staying in the city starts with letter 'A'.
 3. Display sum of SALE, SALE_DATE wise.
 4. Show the data of SALES_DETAILS with PNAME and CNAME field.
 5. Retrieve the total profit for each product and sort them in descending order.
 6. Apply constraint on CCITY field so that the user can enter only 'Ahmedabad', 'Mumbai', and 'Delhi'.
 7. Write an insert query to insert a record into the SALES_DETAIL table.
