

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
BCA/MCA INTEGRATED - SEMESTER - II EXAMINATION - WINTER 2025

Subject Code: BC02001021

Date: 01-12-2025

Subject Name: Database Management System

Time: 02:30 PM TO 05:00 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.**

	Marks
Q.1 (a) Do as directed. 1) Define Database. 2) Define Entity. 3) Define Primary Key. 4) BCNF Stand for _____. 5) Full Form of DML. 6) Full Form of ERD. 7) Difference between strong entity and weak entity.	07
(b) What is DBMS? Explain advantages and disadvantages of DBMS Approach.	07
Q.2 (a) List classifications of Database Management Systems. Explain any two in detail.	07
(b) What is ER diagram? Explain its notation in detail.	07
OR	
(b) Define Query Language. Explain DDL, DML and DCL in detail.	07
Q.3 (a) What do you mean by Normalization? Explain 1NF, 2NF and 3NF.	07
(b) Define Join. List and explain types of Join.	07
OR	
(a) Discuss Generalization and Specialization with diagram.	07
(b) Explain Multivalued Dependency and 4NF with proper example.	07
Q.4 (a) Explain Union, Intersection and Difference(Minus) operations with suitable example.	07
(b) Explain Aggregate Functions with Example.	07
OR	
(a) Write a short note on: Entity Integrity, Referential Integrity and Foreign Keys.	07
(b) Explain the SELECTION and PROJECTION Unary Relational Operations.	07
Q.5 (a) List and explain the ACID properties of transaction with example.	07
(b) Define Transaction. Draw and Explain Transaction state diagram in detail.	07

OR

- (a)** Discuss Characterizing Schedule Based on Serializability in detail with appropriate example. **07**
- (b)** Draw UML Class Diagram on Railway Reservation System. **07**
