

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**MBA INTEGRATED-SEMESTER-II-EXAMINATION-SUMMER-2025**

**Subject Code: 2527107**

**Date: 24/06/2025**

**Subject Name: Database Management System**

**Time: 10:30 AM TO 01:30 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.1** (A) Explain Database Management System (DBMS) architecture with proper diagram. **07**  
(B) Discuss the characteristics of Data in Database Management System. **07**

- Q.2** (A) What is ERD? Specify E-R Symbols and their use Discuss various symbols used to draw E-R diagram with explanation **07**  
(B) Explain in detail the Components of Database. **07**

**OR**

- (B) Discuss advantages of using DBMS against the File Management System. **07**

- Q.3** (A) Explain with Diagrams: **07**  
1) Conceptual Data Model  
2) Logical Data Model  
3) Physical Data Model  
(B) Difference between Strong Entity and Weak Entity. Explain different types of Relationships (Cardinality). With suitable E-R Diagram. **07**

**OR**

- (A) What is Data Independence? Explain its types **07**  
(B) Explain the concept of foreign key and primary keys in DBMS with suitable example **07**

- Q.4** (A) Explain Codd's 12 Rules in detail **07**  
(B) What is Normalization? Explain 1<sup>st</sup> NF, 2<sup>nd</sup> NF, 3NF, BCNF with example. **07**

**OR**

- (A) Explain the Following with Diagrams: **07**  
1) Hierarchical Model  
2) Relational Model  
3) Network Model  
(B) Discuss the functions of SQL- ROLLBACK, COMMIT, SAVEPOINT. **07**

- Q.5** (A) Define SQL. Discuss various types of languages available in SQL. **07**  
(B) Explain Specialization and Generalization in E-R with example. **07**

**OR**

- (A) Explain Group by and Having clause with suitable example. **07**  
(B) Draw E-R Diagram for the situation given below. **07**
- Banks have Customer. Banks are identified by a name, code, address of main office.
  - Banks have branches. Branches are identified by a branch\_no., branch\_name, address.
  - Customers are identified by name, cust-id, phone number, address. Customer can have one or more accounts.
  - Accounts are identified by account\_no., acc\_type, balance.
  - Customer can avail loans.
  - Loans are identified by loan\_id, loan\_type and amount.
  - Account and loans are related to bank's branch.

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