

END TERM EXAMINATION

SECOND SEMESTER [BCA] MAY-JUNE 2026

Paper Code: BCA-108
BCA-102T

Subject: Database Management System

Time: 3 Hours

Maximum Marks: 60

Note: Attempt all questions as directed. Internal choice is indicated.

- Q1 Attempt **any four** of the following questions: (4x5=20)
- (a) Define entity, attribute, and relationship with example.
 - (b) Differentiate between schema and instance. What is a weak entity.
 - (c) What are DDL, DML, and DCL commands? Define NULL values and comparison.
 - (d) Define relational model and its components. What are Codd's Rules?
 - (e) What is normalization? Define domain and tuple.
 - (f) Define transaction in DBMS. What is database recovery?
 - (g) What is database recovery? Define authentication and authorization.
 - (h) What is normalization? Define domain and tuple.
- Q2 Explain DBMS architecture and its components in detail. (10)
- OR**
- Q3 Describe ER model concepts with diagram (entity, attributes, relationships, keys). (10)
- Q4 Discuss different types of joins with examples. Explain SQL data types with examples. (10)
- OR**
- Q5 Describe integrity constraints in detail. Explain views, indexes, and triggers in SQL. (10)
- Q6 Explain relational algebra operations with examples. Discuss ER to relational mapping steps. (10)
- OR**
- Q7 Explain normalization up to BCNF with examples. Describe join operations in relational algebra. (10)
- Q8 Explain ACID properties of transaction in detail. Discuss concurrency problems and control techniques. (10)
- OR**
- Q9 Describe database security mechanisms. Compare SQL and NoSQL database. (10)

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