

(Please write your Exam Roll No.)

Exam Roll No.

END TERM EXAMINATION

SECOND SEMESTER [BCA] JUNE 2024

Paper Code: BCA-108

Subject: Database Management System

Time: 3 Hours

Maximum Marks: 60

**Note: Attempt five questions in all including Q.no.1 which is compulsory.
Select one question from each unit.**

- Q1 Attempt **any Five** of the following questions: (4×5=20)
- (a) Define distributed data processing, instances, schema with example.
 - (b) What is relationship? Explain types of relation with example.
 - (c) What is SQL? Explain characteristics and advantages of SQL.
 - (d) Define integrity constraints Primary key, Not NULL, Check with example.
 - (e) Define Views and sequence with example.
 - (f) Define Domain, Tuples, Relation with suitable example.
 - (g) Explain ACID properties Transaction in DBMS.

UNIT I

- Q2 (a) What are keys? Explain Super key, Candidate key, Primary key with example. (5)
- (b) What is data independence? Explain logical and physical data independence with diagram. (5)
- Q3 (a) What is DBMS? Explain client/server architecture with suitable diagram. (5)
- (b) Define Entity, Entity types, Strong Entity, Weak Entity with example. (5)

UNIT II

- Q4 (a) What is a characteristic of SQL? Explain five data types of SQL. (5)
- (b) Explain Triggers and stored procedure in DBMS with example. (5)
- Q5 (a) Define Nested and Correlated Nested Queries with example. (5)
- (b) What are GROUP BY and HAVING clause? Write a query to illustrate these clauses. (5)

UNIT III

- Q6 (a) Explain 1st, 2nd and 3rd Normal form with example. (4)
- (b) What is Functional dependencies? Explain Armstrong's inference rule. (6)
- Q7 (a) What are joins? Explain Inner, Outer, Left outer, Right outer and full outer join with example. (6)
- (b) Explain Codd's rules in RDBMS. (4)

UNIT IV

- Q8 (a) Define Database recovery. Explain the techniques that are used for database recovery. (5)
- (b) What is transaction? Discuss the different types of transactions failures that may occur in database. (5)
- Q9 (a) What is system failure? Explain backup techniques used for system failure. (6)
- (b) Differentiate between authentication and authorization techniques. (4)

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