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.   https://www.ggsipuonline.com **(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)**

****