END TERM EXAMINATION

SECOND SEMESTER [BCA] MAY-JUNE, 2025

Paper Code: 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: (4×5=20)
(a) What are the main functions of a DBA?
(b) Explain data independence.
(c) List some popular data models.
(d) What is ER Model? Why it is important?
(e) Write disadvantages of direct file organization.
(f) What is the syntax for creating an explicit cursor?
(g) Define denormalization.
(h) What do you mean by view serializability?

Q2 Compare and contrast between external, logical and physical view. **(10)**

OR

Q3 Explain the features of Network model. **(10)**

Q4 Construct an ER diagram for the registrar's office. Document all assumptions you make about the mapping constraints. **(10)**

OR

Q5 Explain the different hash function with example. **(10)**

Q6 What is relational integrity? How it is implemented? **(10)**

OR

Q7 What predefined exception is used to identify the situation where no data is returned by a select statement. **(10)**

Q8 State the ACID properties of a Transaction. **(10)**
OR
Q9 What is Integrity threat? How it can be avoided. **(10)**

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END TERM EXAMINATION

SECOND SEMESTER [BCA] MAY-JUNE, 2025

Paper Code: BCA-108	Subject: *Database Management System*
Time: 3 Hours	Maximum Marks: 60

Note: Attempt any Five questions 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)**

    (a) Differentiate between authentication and authorization techniques. **(4)**

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