

Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem-4)

DATABASE MANAGEMENT SYSTEMS

Subject Code : UGCA1922

M.Code : 79726

Date of Examination: 09-12-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. Write briefly:

- a. Why is data redundancy a problem in traditional file systems?
- b. Why is data independence important in DBMS?
- c. Why do we need foreign keys in a relational database?
- d. Define check constraint.
- e. What will happen if you execute `DELETE FROM table_name;` without a `WHERE` clause?
- f. What is locking in concurrency control?
- g. Difference between undo and redo operation.
- h. Define self-join.
- i. Structure of distributed database.
- j. Define trigger.

SECTION - B

2. Compare DBMS with file-based systems and explain why DBMS is preferred.
3. Explain Entity-Relationship (E-R) Model with suitable examples by taking entity, attributes, relationships and cardinality.
4. Define functional dependency (FD). Explain 1NF, 2NF, 3NF, BCNF normal forms with examples.
5. Define Atomicity, Consistency, Isolation, and Durability. Provide a banking transaction example explaining how ACID ensures data integrity?
6. What is concurrency control? Explain Locking Mechanisms, Timestamp Ordering, and Optimistic Concurrency Control.
7. **Write short note on :**
 - a. Stored procedures
 - b. Alter vs. update in sql using an example.

NOTE: Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.