

**MASTER OF COMPUTER APPLICATION
SECOND SEMESTER
DATABASE MANAGEMENT SYSTEM
MCA-203**

**SET
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1hr. 30 mins.

Full Marks: 35

(Objective)

Time: 15 mins.

Marks: 10

Choose the correct answer from the following:

1 × 10 = 10

- The purpose of Database Management systems are to:
 - Eliminate data redundancy
 - Establish relationship among records in different files
 - Manage file access
 - All of these
- Key to represent relationship between tables is called:
 - Primary key
 - Foreign key
 - Secondary key
 - None of these
- In a relational model, cardinality is termed as number of:
 - Tuples
 - Attributes
 - Tables
 - Constraints
- An un-normalized relation contains values:
 - Atomic
 - Non-atomic
 - Classified
 - None of these
- Data encryption techniques are particularly useful for:
 - Improving data integrity
 - Protecting data communication systems
 - Reduce storage space requirements
 - All of these
- The index consists of:
 - A list of keys
 - Pointers to the master list
 - Both a & b
 - All of these
- Related fields in a database are grouped to form:
 - Data file
 - Data record
 - Manu
 - Bank
- In relational algebra, Cartesian product is aoperator.
 - Unary
 - Binary
 - Ternary
 - Logical
- Which of the following SQL commands can be used to modify existing data in a database table?
 - MODIFY
 - UPDATE
 - CHANGE
 - NEW

10. Relational Algebra does not have.....
- a. Aggregation
 - b. Division
 - c. Selection
 - d. Projection

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(Descriptive)

Time : 1 hr. 15 mins.

Marks : 25

[Answer question no.1 & any two (2) from the rest]

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|---|--------|
| 1. What is DBMS? Discuss the benefits of DBMS. | 5 |
| 2. a) Describe the three-schema architecture. Why do we need mappings among schema levels? | 5+5=10 |
| b) Briefly explain how inner join operation differs from outer join. | |
| 3. a) When is a relation considered to be in 1NF? Define 2NF and 3NF considering only primary key. | 5+5=10 |
| b) Define Boyce-Codd normal form. How does it differ from 3NF? Why is it considered a stronger form of 3NF? | |
| 4. What is the two-phase locking protocol? How does it guarantee serializability? | 10 |
| 5. Discuss what is meant by each of the following terms: database authorization, access control, data encryption, privileged (system) account, database audit, audit trail. | 10 |

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