REV-01
MCA/44/49

2023/06

SET A

MASTER OF COMPUTER APPLICATION
SECOND SEMESTER
DBMS
MCA-203
[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***

1. Database Management systems are intended to:
   a. Eliminate data redundancy
   b. Establish relationship among records in different files
   c. Manage file access
   d. All of these

2. Updating a database means:
   a. Revising the file structure
   b. Reorganizing the database
   c. Modifying or adding record occurrences
   d. All of the above

3. Physical location of a record is determined by a mathematical formula that transforms a file key into a record location in:
   a. A tree file
   b. An indexed file
   c. A hashed file
   d. A sequential file

4. If a relation schema is in BCNF, then it is also in:
   a. First normal form
   b. Second normal form
   c. Third normal form
   d. None of these

5. Data encryption techniques are particularly useful for:
   a. Improving data integrity
   b. Protecting data communication systems
   c. Reduce storage space requirements
   d. All of these

6. The index consists of:
   a. A list of keys
   b. Pointers to the master list
   c. Both a & b
   d. All of these

7. The database administration function includes:
   a. Database access planning
   b. Computer operation management
   c. Application programming
   d. All of these

8. The relational model uses some unfamiliar terminology, a tuple is equivalent to a:
   a. Record
   b. Field
   c. File
   d. Database

9. Which of the following SQL commands can be used to modify existing data in a database table?
   a. MODIFY
   b. UPDATE
   c. CHANGE
   d. NEW

). Generally speaking, for a weak entity set to be meaning it must be part of a:

a. One-to-one relationship
b. One-to-many
c. Many-to-many
d. None of these

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(Descriptive)

Time : 1 hr. 15 mins. **Marks : 25**

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

1. What is DBMS? State its advantages. 5

2. a) Describe the three-schema architecture. Why do we need mappings among schema levels? 5+5=10
   b) Define foreign key. What is this concept used for?

3. a) Define first, second, and third normal forms. 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. Why concurrency control is needed? What is locking? Explain different variations of two phase locking. 10

5. What is SQL injection? What are the risks associated with SQL injection? Write some techniques to prevent from SQL injections. 10

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