

**Roll No.**

**Total No. of Pages : 02**

**Total No. of Questions : 09**

**B.Tech. (Information Technology) (Sem-5)**

## DATABASE MANAGEMENT SYSTEMS

**Subject Code : BTIT502-18**

**M.Code : 78257**

**Date of Examination : 09-06-2023**

**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 **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

## SECTION-A

1. **Write briefly :**
  - a. Define data independence.
  - b. What is the difference between alter and update command in SQL?
  - c. What is referential integrity constraint?
  - d. State 1 NF.
  - e. Define hashing in DBMS.
  - f. What is conflict serializability?
  - g. What is the meaning of deferred update?
  - h. Give an example of authentication methods.
  - i. Give real life example of distributed databases.
  - j. What is intrusion detection?

## SECTION-B

2. Discuss the different mapping cardinalities in ER Models with the help of examples.
3. Explain the role of Normalization in databases. How Normalization helps in better quality for maintaining the databases.
4. Explain the difference between GroupBy and OrderBy clause in SQL. Give suitable example for support of your answer.
5. What is B-Tree? Discuss the different properties of B-Trees.
6. Discuss Timestamp ordering protocol for concurrency control management.

## SECTION-C

7. What is access control? Compare and Contrast DAC, MAC and RBAC models of access controls.
8. Explain the process of query optimization in DBMS? Discuss cost-based query optimization algorithm.
9. **Write a Short note on :**
  - a. ACID Properties
  - b. Object Relational Databases.

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