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Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech. CSE (Internet of Things and Cyber Security including Block
Chain Technology) (Sem.-5)**

DATABASE MANAGEMENT SYSTEMS

Subject Code : BTCS-501-18

M.Code : 92359

Date of Examination : 21-11-2023

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 BCNF. Write down its basic properties.
- b) What is SQL and how does it relate to relational database?
- c) Define a database transaction.
- d) Write down application of DBMS.
- e) Explain the concept of role based access control in database security.
- f) What do you mean by atomicity?
- g) Define a database deadlock and how it can be avoided.
- h) State the difference between relational algebra and calculus.
- i) What is the role of DBMS? What are its advantages over file system?
- j) Compare hierarchal data model and relational data models.

SECTION-B

2. What is Concurrency Control? Discuss three main problems in concurrency control.
3. Why entity integrity and referential important in database? Explain in detail.
4. Why normalization is necessary in the database system and also explains database anomalies in detail.
5. Define Database? Explain the three level Architecture of DBMS in detail.
6. What is authorization and authentication? Explain the access controls in a database.

SECTION-C

7. What is normalization? Explain 1NF, 2NF, 3NF and BCNF in detail.
8. What do you mean by file organization? Discuss the importance of file organization in database. Discuss various types of file organizations available.
9. What do you mean by DML, DDL, DCL, TCL Commands? Explain with examples.

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.