

Roll No.

Total No. of Questions : 09

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B.Tech. (CSE) (Sem.-5)
DATABASE MANAGEMENT SYSTEMS
Subject Code : BTCS-501-18

M.Code : 78320

Date of Examination : 07-06-23

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) What is the benefit of foreign key? Give an example.
- b) What is benefit of implementing data abstraction?
- c) Write SQL commands to create an employee table and then add one record to the same table.
- d) Explain the concept of lossy and lossless decomposition.
- e) What do you mean by composite entity? Give an example of composite entity with the help of ER-Diagram symbols.
- f) What is a join? Give an example of right outer join.
- g) What do you mean by partially committed state? How can a process move from partially committed state to failed state?
- h) What is non-recoverable schedule? Give an example of non-recoverable schedule.
- i) Differentiate between authentication and authorization.
- j) List the various benefits of using RBAC.

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SECTION-B

2. What is relational algebra? Explain the various operations of relational algebra with the help of an example of each.
3. Explain in detail, various algorithms for query optimization.
4. What is the need of concurrency control protocols? Explain any 1 concurrency control, in detail.
5. What is the benefit of implementing checkpoints? Explain which transaction requires undo and which transaction requires redo with the help of a common example.
6. What is SQL injection and how it can be controlled? Give a suitable example.

SECTION-C

7. Explain in detail, various components of the database architecture.
8. What is serializability? Explain in detail, conflict and view serializability with the help of an example of each.
9. **Write short note on :**
 - a) Various DML commands.
 - b) Distributed 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

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