

Roll No.

Total No. of Pages : 02

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B.Tech. (Information Technology) (Sem-5)
DATABASE MANAGEMENT SYSTEMS

Subject Code : BTIT502-18

M.Code : 78257

Date of Examination : 26-06-2024

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. How do object-oriented databases differ from object-relational databases in their data modeling approach?
- b. How does the ER model differ from the relational model in terms of representing data relationships?
- c. How does a web database differ from traditional databases in terms of accessibility and architecture?
- d. What's the core principle behind ACID properties in database transactions?
- e. What's the key difference between DDL and DML in database management?
- f. How do storage strategies differ between row-based and column-based storage in databases?
- g. What's a primary objective of data abstraction in database design?
- h. Explain how hashing in databases helps in achieving efficient data retrieval?
- i. What are the main risks associated with SQL injection attacks, and how can they be mitigated?
- j. What is intrusion detection?

SECTION-B

2. How does the logical database model help in representing complex relationships between data entities?
3. Explain the significance of integrity constraints in maintaining data consistency.
4. What are the challenges associated with implementing multi-version concurrency control schemes in distributed databases?
5. What are the key factors influencing the choice of join strategies in query execution?
6. Discuss the advantages and disadvantages of Discretionary Access Control (DAC) compared to Mandatory Access Control (MAC) in database security.

SECTION-C

7. Compare and contrast object-oriented databases and object-relational databases, covering their data modeling capabilities, query languages, and suitability for different application scenarios.
8. Describe the key principles and components of the Entity-Relationship (ER) model, and how it facilitates database design?
9. Describe the structure and functionality of B-Trees in detail, including how they are used for indexing in databases and their advantages over other data structures?

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.