

Roll No.

Total No. of Pages : 02

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B.Tech. (Artificial Intelligence & Machine Learning/CSE) (Sem.-5)

DATABASE MANAGEMENT SYSTEMS

Subject Code : BTCS-501-18

M.Code : 93171

Date of Examination : 17-12-22

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) Explain the concept of Data Abstraction in brief.
- b) What do you mean by Integrity constraints? Explain.
- c) What are Armstrong's axioms? Explain in brief.
- d) Define the term normalization. What is the need of the normalization?
- e) Differentiate between Cartesian product and Natural join operations used in relational algebra.
- f) Explain the concept of concurrency control in brief.
- g) What do you mean by B-trees? Explain the need of B-trees.
- h) Explain in brief about Locking based Schedulers.
- i) Explain the term authentication in reference to database security.
- j) What is a Web database? Explain in brief.

SECTION-B

2. Write a detailed note on Data Independence. (5)
3. Write a detailed note on Domain Relational calculus. (5)
4. Explain in detail about Hashing. (5)
5. Write a detailed note on Intrusion detection. (5)
6. Explain in detail about Distributed Databases. (5)

SECTION-C

7. Write a detailed note on Entity-Relationship Data Model. (10)
8.
 - a) Explain ACID properties in reference to transaction processing. (5)
 - b) Explain in detail about Database recovery. (5)
9. Explain in detail about following terms : (10)
 - a) Mandatory Access Control
 - b) Discretionary Access Control

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.