

No Preview
Available

Total No. of Question : [4]

Registration No. :

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Programme Name : Computer Science & Engineering(DS)
Regular T.Y.B.Tech. ESE (A.Y. 2023-24) Sem.V Nov.2023
V SEMESTER (2021 BATCH)
201DSL304-Database Engineering

Duration : [11:00 AM - 01:00 PM]

Date : 29 Nov, 2023

Day : Wednesday

Marks : 50

Instructions :

(Q1) All Questions are compulsory [20.0]

(1.1) Define Entity Relationship (E-R) Diagram? Draw and Explain E-R Diagram with example ? [6.0]

CO :- 303.2

Blooms Taxonomy :- Understand

(1.2) Define SQL? [7.0]

Consider the following Database Schema where primary keys are underlined and solve the queries using **SQL** Aggregate functions.

Instructor (ID, name, deptname, salary)

Teaches (ID, course_id , sec_id , semester , year)

Course (course_id, title, deptname, credits)

- a. Find the average salary of instructors in the Computer Science department
- b. Find the total number of instructors who teach a course in the Spring 2010 semester
- c. Find the number of tuples in the *course* relation.

CO :- 303.3

Blooms Taxonomy :- Apply

(1.3) What is Normalization? Explain 2NF in detail? [7.0]

CO :- 303.1

Blooms Taxonomy :- Understand

(Q2) All Questions are compulsory [10.0]

(2.1) Illustrate Dense and Sparse Indices with neat diagrams? [4.0]

CO :- 303.4

Blooms Taxonomy :- Analyze

(2.2) Define Hashing? Explain Dynamic hashing in detail? [6.0]

CO :- 303.4
Blooms Taxonomy :- Analyze

OR [2.2 / 2.3]

(2.3) What is log? Explain different types of log records? [6.0]

CO :- 303.4
Blooms Taxonomy :- Analyze

(Q3) All Questions are compulsory [10.0]

(3.1) Explain the concept of shadow paging? [3.0]

CO :- 303.5
Blooms Taxonomy :- Understand

(3.2) Discuss the Timestamp-Ordering Protocol in details ? [7.0]

CO :- 303.5
Blooms Taxonomy :- Understand

OR [3.2 / 3.3]

(3.3) Demonstrate Two-Phase Locking Protocol in brief ? [7.0]

CO :- 303.5
Blooms Taxonomy :- Understand

(Q4) Attempt any two out of three questions [10.0]

(4.1) Discuss Mandatory Access Control and Role- Based Access Control for Multilevel Security ? [5.0]

CO :- 303.6
Blooms Taxonomy :- Understand

(4.2) Explain the term Statistical Database Security in detail? [5.0]

CO :- 303.6
Blooms Taxonomy :- Understand

(4.3) Describe Discretionary Access Control Based on Granting and Revoking Privileges ? [5.0]

CO :- 303.6
Blooms Taxonomy :- Understand
