

Reg.No:



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

Coimbatore – 641 035.



B.E / B.Tech – Internal Assessment Exam- I
Academic Year 2023-2024 (EVEN)

Fourth Semester (Regulation R2019)



19CST202 – Database Management Systems
(Common to AIML, CSE and IT)

TIME: 1.5 HOURS

MAXIMUM MARKS: 50

ANSWER ALL QUESTIONS

PART A — (5 x 2 = 10 Marks)

- | | | |
|---|-----|-----|
| 1. State the levels of abstraction in a DBMS. | CO1 | Rem |
| 2. Compare database systems with file systems. | CO1 | Und |
| 3. Describe data model and list the types of data model used. | CO1 | Und |
| 4. Define the term Cardinality. | CO2 | Und |
| 5. State about PROJECT operation in Relational algebra? | CO2 | rem |

PART B — (2 x 13 = 26 Marks, 1x 14 = 14 Marks)

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|--|-----|-----|----|
| 6. (a) Construct an E-R diagram for a car-insurance company whose customers own one or more cars each. Each car has associated with it zero to any number of recorded accidents
(OR)
(b) Explain the database system architecture with neat diagram? | CO1 | App | 13 |
| 7. (a) Define relational algebra. Explain various relational algebraic operations with example
(OR)
(b) Create a table for storing Student information of a particular College. Use DDL commands with proper syntax. | CO2 | App | 13 |
| 8. (a) Consider the following relational schema Employee (empno, name, office, age) Books (isbn, title, authors, publisher) Loan (empno, isbn, date) Write the following queries in relational algebra. | CO2 | App | 14 |

- a. Find the names of employees who have borrowed a book Published by McGraw-Hill.
- b. Find the names of employees who have borrowed all books Published by McGraw-Hill.
- c. Find the names of employees who have borrowed more than five different books published by McGraw-Hill.
- d. For each publisher, find the names of employees who have borrowed.

(OR)

- (b) Let E1 and E2 be two entities in an E/R diagram with simple single-valued attributes. R1 and R2 are two relationships between E1 and E2, where R1 is one to-many and R2 is many-to-many. R1 and R2 do not have any attributes of their own. Calculate the minimum number of tables required to represent this situation in the relational model. CO1 App 14

**Note: CO – Course Outcome, Blooms Taxonomy Abbreviations:
Rem - Remembrance, Und-Understanding, App - Apply, Ana - Analyze, Eva - Evaluate, Cre -
Create**

Prepared by

Verified by

HOD