



K25P 2253

Reg. No. :

Name :

Second Semester M.C.A. Degree (CBSS – Reg./Supple./Imp.)

Examination, May 2025

(2021 Admission Onwards)

MCA2C03 : DATABASE MANAGEMENT SYSTEMS

Time : 3 Hours

Max. Marks : 60

SECTION – A

Answer **all** questions. **Each** question carries **two** marks.

1. Explain derived attribute with an example.
 2. What do you mean by full functional dependency ?
 3. Differentiate the DELETE and DROP commands in SQL.
 4. What is an index ? Give example.
 5. What do you mean by atomicity in a transaction ? Give an example.
 6. Explain the term "dirty read" in a transaction.
 7. Explain heterogeneous distributed database.
 8. What is distributed query processing ? Why is it needed ?
 9. What is OLAP ?
 10. What is precision in document retrieval ? How will you find out precision ?
- (10×2=20)

SECTION – B

Answer **all** questions. **Each** question carries **eight** marks.

11. a) Explain various relational algebra operations.

OR

- b) Explain the components of Enhanced Entity Relationship with examples.

P.T.O.



12. a) Consider the following schemas EMPLOYEE (ID, NAME, DEPT, TITLE) and DEPARTMENT (ID, NAME, LOCATION). Answer the following queries.

- 1) Display the name and title of all the employees who work in the accounting department.
- 2) Display the result of the previous query in alphabetical order by the employee's name.
- 3) Display all the information for everyone in the EMPLOYEE table who is a clerk.
- 4) Display all the details of departments located at 'Miami'.
- 5) Display all the information about the employees along with their department's ID, name and location.
- 6) Display the total number of employees in each department.
- 7) Find the names of departments that have no employees.
- 8) List the names of employees and the locations of their departments.

OR

b) Explain user and group management in PostgreSQL.

13. a) Discuss how timestamp ordering protocol works in DBMS.

OR

b) Explain Two-Phase Locking in concurrency control.

14. a) Explain interquery and intraquery I/O parallelism.

OR

b) Explain the concept of distributed data storage. What are its advantages and challenges ?

15. a) Explain different schemas involved in a data warehouse.

OR

b) What do you mean by relevance ranking using hyperlinks ? Explain the concept of PageRank and HITS.

(5×8=40)