

FACULTY OF INFORMATICS

M.C.A. (2 Years Course) II-Semester (CBCS) (Backlog) Examination, March /April 2024

Subject: Database Management Systems

Time: 3 Hours

Max. Marks: 70

Note: I. Answer one question from each unit. All questions carry equal marks.

II. Missing data, if any, may be suitably assumed.

Unit - I

1. a) What is DBMS? What are the advantages of DBMS?
b) Explain about Database Design Steps.

(OR)

2. a) Discuss about ER Modeling.
b) Draw the ER Diagram for Banking Enterprise.

Unit – II

3. a) Give an account on Structure of Relational Databases.
b) Discuss about Fundamental Relational Algebra Operations.

(OR)

4. a) What is SQL? Elaborate DDL commands in SQL.
b) Explain about Aggregate Functions in SQL.

Unit – III

5. a) Describe different types of Integrity Constraints with Example.
b) Explain about Procedures in SQL with Example.

(OR)

6. What is Functional Dependency? Illustrate different types of Normal Forms with suitable Example.

Unit - IV

7. Discuss about the following

- a) B+ Trees
- b) Hash based Indexing (OR)

8. a) Briefly explain about Transaction Properties.
b) Define Serializability? Write about Conflict and View Serializability with Example.

Unit - V

9. a) Elaborate Lock based Concurrency Control Protocols.
b) Briefly describe the approaches for handling Deadlocks.

(OR)

10. Discuss the following

- a) Aggregate Data Models
- b) Key Value Databases