

CMR ENGINEERING COLLEGE: : HYDERABAD**UGC AUTONOMOUS****II–B.TECH–I–Semester End Examinations (Supply) - June- 2025****DATABASE MANAGEMENT SYSTEMS****(Common for CSE, CSC)****[Time: 3 Hours]****[Max. Marks: 60]****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 10 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A**(20 Marks)**

1. a) What are the goals of DBMS? [1M]
- b) List any four applications of DBMS. [1M]
- c) Define about Relational Algebra. [1M]
- d) What is E-R model? [1M]
- e) Define triggers in Data Base. [1M]
- f) Explain Functional dependencies in Database. [1M]
- g) Explain about ACID properties. [1M]
- h) What is durability in a database? [1M]
- i) What is an index data structure? [1M]
- j) Define Clustering Index. [1M]

PART-B**(50 Marks)**

2. What is Entity set and also define Relationship set. List and explain the symbols used to draw ER Diagram [10M]

OR

3. Define data model. Explain the entity-relationship model with a neat diagram. [10M]
4. What are the types of Relational Calculus and explain about domain relational calculus in details. [10M]

OR

5. Discuss briefly about Domain relational calculus with suitable example. [10M]
6. Define 1NF, 2NF and 3NF and explain with examples. [10M]

OR

7. Explain the following Operators in SQL with examples. [10M]
i) SOME ii) IN iii) EXCEPT iv) EXISTS

8. Explain early lock release and logical undo operation. [10M]

OR

9. Explain timestamp based protocol for ensuring serializability of concurrent executions of transactions with example. [10M]

10. Explain Heap File Organization and Hash File Organization. [10M]

OR

11. Distinguish between Hash based indexing and Tree based indexing. [10M]
