

Code No.: CS301PC

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**CMR ENGINEERING COLLEGE: : HYDERABAD**  
**UGC AUTONOMOUS**  
**II-B.TECH-I-Semester End Examinations (Supply) - August- 2023**  
**DATABASE MANAGEMENT SYSTEMS**  
**(Common to CSE, CSC & CSD)**

[Time: 3 Hours]

[Max. Marks: 70]

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 20 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) List various types of attributes? [2M]
- b) Define Aggregate Functions? [2M]
- c) Write about Transaction management? [2M]
- d) List the properties of ER diagram. [2M]
- e) Discuss about trigger? [2M]
- f) Define Boyce codd normal form? [2M]
- g) Explain different types of locks? [2M]
- h) Define ACID properties? [2M]
- i) Explain Hash based Indexing? [2M]
- j) Define Indexed Sequential Access Method? [2M]

**PART-B**

(50 Marks)

2. What is E-R model? Illustrate an E-R Diagram for any Banking enterprise system. [10M]
  - OR**
  3. a) Discuss the activities of different database users. [5M]
  - b) Explain the functions of Database Administrator. [5M]
  4. Explain about domain relational calculus with example. [10M]
  - OR**
  5. Illustrate different set operations in Relational algebra with an example? [10M]
  6. What is meant by functional dependencies? Discuss about second and third normal form. [10M]
  - OR**
  7. Explain any four Aggregate functions and nested queries with examples. [10M]
  8. Explain lock based protocols and Log-Based recovery schemes for recovering the data base? [10M]
  - OR**
  9. a) Explain multiple granularity of locking protocol with example. [5M]
  - b) What is serializability? Explain. [5M]
  10. Explain about
    - a) Validation-Based Protocol. [5M]
    - b) B+ trees with example. [5M]
  - OR**
  11. Explain insert and delete operations of Extendable hashing with example. [10M]
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