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Reg. No. | | | | | | | | |

II Semester M.C.A. Degree Examination November/December- 2025

COMPUTER SCIENCE

Data Base Management Systems

(CBCS Scheme 2020-21)

Paper : 2 MCA 2

Time : 3 Hours **Maximum Marks : 70**

Instructions to Candidates:

1) **Answer any Five questions from Part - A.**

2) **Answer any Four questions from Part - B.**

PART - A

Answer any Five questions. Each question carries 6 marks. **(5×6=30)**

1. Define
   a) Entity
   b) Attribute
   c) Relationship with examples.
2. Explain 3 - tier client - server architecture with a neat diagram.
3. Write a note on different types attributes.
4. Explain Unary relational operations with examples.
5. Explain JOIN and UNION relational algebra operations.
6. Explain ACID properties.
7. Why Concurrency control is needed? Demonstrate with an example.
8. Demonstrate the Database Transaction with transaction diagram.

[P.T.O.

PART - B

Answer any Four questions. Each question carries 10 marks. **(4×10=40)**

9. What are the advantages of using DBMS approach? Explain.

10. What is normalization? What are the conditions required for a relation to be in 2NF and 3NF explain with examples.

11. Consider two sets of functional dependency :

$F = \{A \rightarrow C, AC \rightarrow D, E \rightarrow AD, E \rightarrow H\}$ $E = \{A \rightarrow CD, E \rightarrow AH\}$. Are they Equivalent?

12. Explain stored procedure language in SQL with an example.

13. Explain the two phase locking protocol used for concurrency control.

14. Explain the Cursor and its properties in embedded SQL with an example.