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**MBA**  
**(SEM IV) THEORY EXAMINATION 2023-24**  
**DATA BASE MANAGEMENT SYSTEM**

**TIME: 3 HRS****M.MARKS: 100****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****2 x 10 = 20**

| Q no. | Question  | Marks | C<br>O |
|-------|---|-------|--------|
| a.    | Define DML  | 02    | 1      |
| b.    | What do you understand by DBMS?                               | 02    | 1      |
| c.    | Define primary key.   | 02    | 2      |
| d.    | Differentiate Super key and Candidate key.                    | 02    | 2      |
| e.    | Discuss the concept of indexes in SQL.                        | 02    | 3      |
| f.    | List out the types of Functional Dependencies.                | 02    | 3      |
| g.    | What is Log based Recovery?                                   | 02    | 4      |
| h.    | Explain Concurrency control.                                  | 02    | 4      |
| i.    | Expand OODB.  | 02    | 5      |
| j.    | Write down the problem areas of distributed data base system. | 02    | 5      |

**SECTION B****2. Attempt any three of the following:****3 x 10 = 30**

|    |  |    |   |
|----|--|----|---|
| a. | Define E-R model with example. How to convert an E-R model into relational schema?                 | 10 | 1 |
| b. | Describe the tuple relational calculus with example.   | 10 | 2 |
| c. | Explain 1NF, 2NF and 3NF with example.   | 10 | 3 |
| d. | Discuss the concept of serializability with the help of inferring serial and non-serial schedules. | 10 | 4 |
| e. | “Data Mining is the backbone of Data Warehousing”. Explain.  | 10 | 5 |

**SECTION C****3. Attempt any one part of the following:****1 x 10 = 10**

|    |   |    |   |
|----|---|----|---|
| a. | Draw the overall structure of DBMS and explain its various components.                                | 10 | 1 |
| b. | Distinguish strong entity set with weak entity set? Draw an ER diagram to illustrate weak entity set? | 10 | 1 |

**4. Attempt any one part of the following:****1 x 10 = 10**

|    |  |    |   |
|----|--|----|---|
| a. | Define relational algebra. Explain various relational algebraic operations with example. | 10 | 2 |
| b. | Discuss various types of schemas in Database management system with diagram.             | 10 | 2 |

**5. Attempt any one part of the following:****1 x 10 = 10**

|    |  |    |   |
|----|--|----|---|
| a. | What are the various data types in SQL? Explain them with example?                 | 10 | 3 |
| b. | Explain functional dependencies? Write the types of functional dependencies, also. | 10 | 3 |

**6. Attempt any one part of the following:****1 x 10 = 10**

|    |  |    |   |
|----|--|----|---|
| a. | List the ACID properties. Explain the usefulness of each with example. | 10 | 4 |
| b. | Explain Deadlock in detail with an example.                            | 10 | 4 |

**7. Attempt any one part of the following:****1 x 10 = 10**

|    |  |    |   |
|----|--|----|---|
| a. | Explain in detail the Client - Server Architecture for DDBMS         | 10 | 5 |
| b. | List out the differences between spatial and geographical databases. | 10 | 5 |