PAPER ID-410880

Subject Code: KMBNIT03

Roll No: | | | | | | | | | | | | | |

**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 | CO |
|---|---|---|---|
| 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 |