CB
(Batch 2023-24)

TILAK MAHARASHTRA VIDYAPEETH, PUNE

MASTER OF COMPUTER APPLICATIONS

(Specialization in Artificial Intelligence & Machine Learning) / (Specialization in Data Science)/(Specialization in Cloud Technology)

EXAMINATION :MAY - 2024

SEMESTER - I

Sub: Database Management Systems (MCAI 23-104/MCDS23-104/MCCL-23-104)

Date : 25/05/2024 **Total Marks : 60** **Time: 2.00 pm to 4.30 pm**

Instruction:

1. *All questions are compulsory unless and otherwise stated.*
2. *Bold figures to the right of every question are the maximum marks for that question.*
3. *Candidates are advised to attempt questions in order.*
4. *Answers written illegibly are likely to be marked zero.*
5. *Use of scientific calculators, Log tables, Mollier Charts is allowed.*
6. *Draw neat and labelled diagram wherever necessary.*

Q.1. Answer the following in 2-3lines. (Any 5) **(10)**

1. List out SQL query operations.
2. What is anomaly in database?
3. What is Shared and Exclusive Lock?
4. What is object structure in object oriented paradigm?
5. What are the design techniques used in RDBMS?
6. What is the concept of Inheritance?
7. What is Tuple? List out tuple types.

Q. 2. Answer the following in short. (Any 4) **(20)**

1. Differentiate between Primary Key and Candidate Key.
2. What is Intersect? How it works?
3. Explain desirable properties of transactions.
4. Write a short note on Peer−to−Peer architecture.
5. Explain extension techniques in RDBMS.
6. Write a short note on 2NF.

Q. 3. Answer the following in detail. (Any 3) **(30)**

1. Write the queries to perform various operations on below given table:
    1. CREATE TABLE student with fields RN, name, class, mobile.
    2. Roll no. must be primary key.
    3. Add 3 records in given table.
    4. Display all records from table
    5. Delete 2 row details from the table.
2. Explain two-way merge sort algorithm in detail.
3. Describe architecture for a locking scheduler.
4. What is data fragmentation? Explain its types. List out advantages and disadvantages as well.
5. Differentiate between OODBMS & RDBMS.
