

2312258

[Total No. of Pages : 2

12-00-2-04R

**MASTER OF COMPUTER APPLICATIONS DEGREE EXAMINATION,
SEPTEMBER - 2023**

SECOND SEMESTER

MCA 204 - ADVANCED DATABASE MANAGEMENT SYSTEMS

(Under C.B.C.S. Revised Regulations w.e.f. 2020-2021)

(Common Paper to University and All Affiliated Colleges)

Time : 3 Hours

Max. Marks : 70

PART-A

Answer any **FIVE** of the following questions. Each question carries **4** marks. **(5×4=20)**

1. a) What is meant by physical data independence?
- b) What is a candidate key? How is it identified?
- c) What is a weak-entity set?
- d) What is a view? Explain with an example.
- e) Explain group by and having clauses with examples.
- f) What is ODBC? When is it used and How?
- g) What is a persistent pointer?
- h) Write about nesting and unnesting.
- i) How is duplicate elimination done by sorting? Explain.
- j) What are ACID properties? Explain their significance in database design.

PART - B

Answer **FIVE** questions choosing **ONE** question from each Unit. Each question carries **10** marks. **(5×10=50)**

UNIT - I

2. i) Write about different levels of data abstraction. Explain with a neat diagram.
- ii) What is DDL? What are the consistency constraints that can be implemented?

(OR)

3. i) Write about natural join operation of two relations with an example.
- ii) Consider the following relational schema.

Employee(empno, name, office, age)

Books(isbn, title, authors, publisher)

Loan(empno, isbn, date)

12-00-2-04R

(1)

[P.T.O

Write the following queries in relational algebra.

- a) Find the names of employees who have borrowed a book published by McGraw Hill.
- b) Find the names of employees who have borrowed all books published by McGraw Hill.
- c) Find names of employees who have borrowed more than five books of that publisher.
- d) For each publisher, find names of employees who have borrowed more than five books of that publisher.

UNIT - II

4. i) How are null values handled? Explain.
- ii) Write about any five aggregate operations in SQL.

(OR)

5. i) What is a trigger? Discuss its implementation with an example for inserting a record into a table.
- ii) What is embedded SQL? Discuss the circumstances in which you use embedded SQL instead of SQL only.

UNIT - III

6. i) Discuss about array and multi-set types in SQL.
- ii) Write about persistency of objects with examples.

(OR)

7. i) Write about XML Document Schema.
- ii) Explain about querying and transformation.

UNIT - IV

8. i) Explain hash join algorithm.
- ii) Explain how to evaluate an expression using multiple operations in Query processing.

(OR)

9. i) Write about selection size and join size estimations.
- ii) Discuss about cost-based optimisation.

UNIT - V

10. i) Write the state diagram of a transaction and explain.
- ii) How do you handle the effect of transaction failures during concurrent execution.

(OR)

11. i) Explain Two phase locking protocol.
- ii) Explain about deadlock detection and recovery.