(6 pages)

Reg. No. : ....

Code No. : 6063   **Sub. Code : ZCAM 24**

M.C.A.(CBCS) DEGREE EXAMINATION, APRIL 2023.

Second Semester

Computer Application – Core

ADVANCED DATA BASE MANAGEMENT SYSTEM

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A Relational Database consists of a collection of

   (a) Table   (b) Rows

   (c) Columns   (d) All

2. Which Operation returns rows of the input relation that satisfy the predicate?

   (a) Union   (b) Natural Join

   (c) Projection   (d) Selection

3. The process of designing subgrouping within an entity set is called

   (a) Specialization   (b) Serialization

   (c) Parallelization (d) Generalization

4. The primary key of an entity set allows us to distinguish among the various entities of the _____

   (a) Set   (b) Values

   (c) Database   (d) Tables

5. The _____ clause is used to list the attributes desired in the result of query

   (a) Where   (b) Select

   (c) From   (d) Distinct

6. A B⁺ tree index is a _____

   (a) Secondary index (b) Dense index

   (c) Sparse index   (d) Multilevel index

7. Conversion from shared to exclusive modes by _____

   (a) Upgrade   (b) Insert point

   (c) Starting point   (d) Lock point

8. ———————— is a state of a database system having two or more transaction, when each transaction is waiting for a data item that is being locked by some other transaction

    (a) Semaphore

    (b) Deadlock

    (c) Wait state

    (d) Page management system

9. Which of the Join operations do not preserve non matched tuples?

    (a) Left outer join   (b) Right outer join

    (c) Inner join   (d) Natural join

10. The ———————— manger manages the execution of those transaction that access data stored in a local site

    (a) Transaction   (b) Database design

    (c) Locking Protocol   (d) Shrinking Phase

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) List out the advantage and disadvantage of DBMS?

         Or

   (b) Write short notes on the following.

      (i) Select Operation (ii) Project Operation

12. (a) Discuss the attribute inheritance in extended E-R feature.

         Or

   (b) Write short notes on domain relational calculus?

13. (a) Draw Transaction state diagram and explain its status.

         Or

   (b) Describe 4NF & 5NF.

14. (a) Describe validation steps for update transaction in snapshot isolation.

         Or

   (b) Write short note on concurrency control.

15. (a) Discuss the Partitioning technique.

Or

(b) Describe distributed data storage.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Explain the following with example.

(i) The Entity-Relationship Model

(ii) Relational Model

Or

(b) Explain the structure of Relational Database.

17. (a) Explain about Entity Relationship design issues.

Or

(b) Explain Functional dependency & BCNF.

18. (a) What is Serializability? Explain in detail.

Or

(b) Discuss Queries and updates in dynamic hashing.

19. (a) Explain insert and delete operations in timestamp base protocol.

Or

(b) Explain TWO-Phase locking protocol.

20. (a) Explain Server system Architecture.

Or

(b) Illustrate Parallel database architecture with example.

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