



K24P 1403

Reg. No. :

Name :

Second Semester M.C.A. Degree (CBSS – Reg./Supple./Imp.)
Examination, May 2024

(2020 Admission Onwards)

MCA2C03 : DATABASE MANAGEMENT SYSTEMS

Time : 3 Hours

Max. Marks : 60

SECTION – A

Answer **all** questions. **Each** question carries **two** marks.

1. Explain hierarchical model of DBMS.
2. Explain the select operation in relational algebra with an example.
3. Explain how to remove a view with syntax and example.
4. Explain EXISTS operator in PostgreSQL.
5. What is growing phase and shrinking phase in 2PL locking ?
6. Explain recoverable schedule with an example.
7. Explain the advantages of parallel databases.
8. What is replication ? Mention its advantages and disadvantages.
9. What are the factors considered for relevance ranking ?
10. What is data mining ? Mention different kind of knowledge mined. (10×2=20)

SECTION – B

Answer **all** questions. **Each** question carries **eight** marks.

11. a) Explain the symbols used in ER model. Draw an example ER diagram.

OR

- b) Explain 1NF, 2NF and 3NF with examples.

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12. a) Explain the following with examples.

- i) Primary key constraint
- ii) Foreign key constraint
- iii) Unique constraint
- iv) Not Null constraint.

OR

b) Consider the following schema and write down the SQL for the following. Assume the table is created with necessary constraints and values inserted.

Sailors (sid:integer, sname:string, rating:integer, age:integer)

Boats (bid:integer, bname:string, color:string)

Reserves (sid:Integer, bid:integer, day:date)

- i) Find the names and ages of all sailors.
- ii) Find the names of sailors who have reserved boat 103.
- iii) Find the color of the boat reserved by Lubber.
- iv) Find the names of sailors who have reserved a red boat or a green boat.
- v) Count the number of sailors.
- vi) For each red boat, find the number of reservations for this boat.
- vii) Find the sids of sailors with age over 20 who have not reserved a red boat.
- viii) Find the names of sailors whose name begins with B.

13. a) Explain Timestamp ordering protocol.

OR

b) Briefly explain shared or exclusive locks in concurrency control.

14. a) Explain distributed two phase locking algorithm.

OR

b) Explain intra-operation and inter-operation parallelism.

15. a) Explain the components and advantages of a decision support system.

OR

b) Explain measuring retrieval effectiveness.

(5×8=40)