



PS – 387

II Semester M.C.A. Examination, November/December 2022
(CBCS) (2020 – 21 and Onwards)
COMPUTER SCIENCE
2MCA2 : Database Management System

Time : 3 Hours

Max. Marks : 70

Instruction : Answer **any five** from Section **A** and **any four** from Section **B**.

SECTION – A

Answer **any five** questions. **Each** question carries **six** marks. **(5×6=30)**

1. Define DBMS. What are the advantages of using DBMS over traditional file system ?
2. What is Schema ? Explain with a neat diagram 3 schema architecture of DBMS.
3. Write a note on hashing techniques.
4. Explain domain constraint, key constraint and referential integrity constraints.
5. Explain views in SQL with example.
6. Discuss ACID properties of a transaction.
7. Explain relational algebra select, project and join operations with example.
8. What is scheduling a transaction ? Describe serial, non-serial and conflict serializable schedules.

SECTION – B

Answer **any four** questions. **Each** question carries **ten** marks. **(4×10=40)**

9. Explain different types of database users. **10**
10. Build a entity relationship diagram for Covid Vaccination Management System. Assume that there a 'n' hospitals 'm' doctors an 'k' citizens. Also assume that citizens have to take two doses of vaccine and there are two types of vaccines. Senior citizens have to be given priority. **10**

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11. Explain 1NF, 2NF and 3NF with comparison between 3NF and BCNF. 10
12. Using the following tables write the SQL statement to solve below given questions. 10
- Customer (custid, custname, location)
Product (productid, prodname, price)
Order-hd (orderid, orderdt, custid, totamt)
Order-dt (orderid, productid, qty)
- Write SQL queries for following.
- 1) Create above table with suitable primary key and foreign keys.
 - 2) Find number of orders placed by each customer.
 - 3) Find total quantity of purchases made order by product name.
 - 4) List the orders placed in the month of 'May'.
 - 5) List order details where total amount is more than average amount of product bought.
13. Explain two phase locking protocol used in concurrency control mechanism. 10
14. Write a note on :
- a) Recovery techniques. 5
 - b) Triggers. 5
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