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Uni. Roll No. ....

Program: B.Tech. (Batch 2018 onward)
Semester: 5th
Name of Subject: Database Management Systems
Subject Code: PCCS-109
Paper ID: 16429

MORNING

0 9 MAY 2023

Time Allowed: 03 Hours   **Max. Marks: 60**

NOTE:

1) Parts A and B are compulsory
2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
3) Any missing data may be assumed appropriately

Part – A [Marks: 02 each]

Q1.

   a) What is an instance and a schema?

   b) Explain commands with respect to SQL: (i) Rename (ii) Alter

   c) Name the properties that must be satisfied by a transaction.

   d) Demonstrate the use of DISTINCT keyword in SQL select statement.

   e) Does 3NF allow redundancy? Justify your answer.

   f) Can a view be defined with other view? Explain with example.

Part – B [Marks: 04 each]

Q2. What is Entity set? Also define Relationship set. List and explain the symbols used to draw ER Diagram.

Q3. How does DBMS provide data abstraction? Explain the concept of data independence.

Q4. List and explain various data models used for database design.

Q5. What is need of lock in DBMS? Differentiate between a shared lock and exclusive lock with the help of example.

Q6. List and explain various issues while transactions are running concurrently in DBMS.

Q7. Analyse the problems caused by redundancy and the purpose of normalization.

Q8. Define Schema. Explain three level architecture in DBMS.

<div align="center">OR</div>

Explain the aggregate functions in SQL with example.

Q9. Does two phase locking protocol ensure conflict serializability? Justify your answer with appropriate examples.

<div align="center">OR</div>

Differentiate between strict two-phase locking protocol and rigorous two-phase locking protocol.

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