(01/13-II)

2205

P.G.D.C.A./M.C.A./M. Sc. (Comp. Sc.) (First Year) EXAMINATION

(New Scheme)

DATABASE SYSTEMS

MSc-DE-15/MCA-DE-15/PGDCA-V

Time : Three Hours   *Maximum Marks : 70*

Note :   Attempt any *Five* questions.

1.   What do you mean by database ? Explain the characteristics of the database approach.   14

2.   (a)   What do you mean by data independence ? Discuss various types of it.   5

     (b)   Discuss various types of Database languages in brief.   9

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3. (a) Draw and explain the ER schema diagram for the database of your choice. 9

   (b) Discuss constraints on relationship type in context with ER diagram. 5

4. (a) Define domain, tuple, attribute and relation in context with relational model with the help of example. 9

   (b) Discuss the characteristics of relations. 5

5. What do you mean by normalization ? Discuss first, second and third normal forms. 14

6. Define timestamp ordering. Discuss timestamp ordering algorithm in detail. 14

7. Discuss the following :

   (a) SELECT and PROJECT operation of relational algebra with the help of example. 7

   (b) Between operator, Like operator and order by clause in relation to SQL with the help of example. 7

8. Discuss recovery techniques based on deferred update and immediate update. 14

9. List and explain the issues addressed by database security. Discuss discretionary and mandatory security mechanisms of database security. 14

10. Write notes on the following :

    (a) Three schema architecture of a database 5

    (b) Data Models. 9