(i) Printed Pages: 3

(ii) Questions : 9

Roll No. ....

Sub. Code : 8 7 1 1

Exam. Code : 1 2 1 9

PGDCA 1st Semester

(2122)

DATABASE MANAGEMENT SYSTEM

Paper : PGD-1103

Time Allowed : Three Hours]   [Maximum Marks : 60

Note :—Candidates are required to attempt **five** questions in all, including Question No. **9** which is compulsory and attempt remaining **four** questions by selecting at least **one** question from each Section.

SECTION—A

1. Compare and contrast the features, merits and limitations of database and file oriented approach.   12

2. What do you understand by the conceptual design of a relational database model ? Prepare an ER diagram for University system.   12

SECTION—B

3. Explain the concept of functional dependencies in normalization. Distinguish between various normal forms from 1NF to 3NF with examples.   12

4. Discuss various risks involved in database security. Explain the locking technique for concurrency control along with its merits and limitations. 12

SECTION—C

5. Solve the following database retrieval problems using appropriate SQL queries. Create a table EMPLOYEE with attributes required for following queries and constraints like Primary Key, Not Null and Unique.

   (1) Insert the values in the EMPLOYEE table :

      (a) One at a time

      (b) Multiple at a time.

   (2) List the employee data having salary less than 75,000 from the table EMPLOYEE.

   (3) List emp id, name and date of birth of employee of HR department with age greater than 50 years as on current date.

   (4) Write a query that returns everyone in the database whose project name begins with S. 12

6. What do you understand by conditional retrieval of rows ? Discuss various functions available in SQL for writing queries. 12

SECTION—D

7. Write notes on :

   (a) Set operators

   (b) Commit and rollback. 12

8. With suitable SQL queries, explain the usage of equi join and Cartesian join for querying multiple tables. 12

(Compulsory Question)

9. (a) List advantages of DBMS. 2

(b) Define distributed database. 2

(c) What do you understand by relational algebra ? 2

(d) Give an example of nested query. 2

(e) What is the relevance of log based recovery ? 2

(f) Define aggregate function. 2