P-820

MCA-13/MSCIT-14

Advanced DBMS

(MCA/MSCIT)

4th Semester Examination, 2023 (June)

Time : 2 Hours]   **Max. Marks : 70**

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answer to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

SECTION–A

(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

(2×19=38)

1. What are the different SQL data types? Write a program in SQL that demonstrate declaring, defining and invoking a simple SQL function that computes and returns the maximum of two values.

2. Construct an E-R diagram for a training institute which imparts soft skills. The institute maintains records about instructors, students, classes, assignments, results (Theory as well as practical's) class timings for each student. The number of subjects, in which the candidate is enrolled and past performances in different subjects is recorded. Document all assumptions that you make about the mapping constraints.

3. WhaLis concurrency control? How is it achieved in database systems? Explain various concurrency control techniques.

4. What is Normalization? Explain INF, 2NF, 3NF, BCNF using appropriate example.

5. Answer the following :

   (a) What is database security? What are the different data base security issues?

   (b) What is database transaction? Describe the different operations that are performed during a transaction?

SECTION–B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only.   (4×8=32)

1. What are the Codd's rule? Discuss the Codd's rule for the designing an efficient database.

2. What is Entity relationship model? Discuss its role in DBMS.

3. What do you mean by functional dependency? Explain different types of functional dependency using suitable example.

4. What are anomalies? Explain different types of anomalies in the context of un-normalized database.

5. Explain DROP command. What are the differences between DROP, TRUNCATE and DELETE commands in DBMS?

6. Explain Join, Union and Intersection operation of SQL with the help of example.

7. Explain the different security issues involved in database management system. Why security is important in DBMS?

8. Write short notes on :

(a) Aggregation.

(b) Schema.

(c) Key Constraint.

(d) Encryption.

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