DIPLOMA – VIEP – COMPUTER SCIENCE AND
ENGINEERING (DCSVI)

00915   Term-End Examination

June, 2015

BICS-038 : DATABASE MANAGEMENT SYSTEM

Time : 2 hours   *Maximum Marks : 70*

Note : *Attempt **five** questions in all. Question no. 1 is*
*   **compulsory**. Each question carries equal marks.*

1. Choose the correct answer from the given four
    alternatives :   7×2=14

    (a) DML stands for
        (i)   Data Managing Language
        (ii)   Data Management Layer
        (iii) Data Manipulation Layer
        (iv)   Data Manipulation Language

    (b) Which of the following is **not** a level of data
         abstraction ?
        (i)   Physical level
        (ii)   Logical level
        (iii) View level
        (iv)   Critical level

(c)   In an ER-Diagram, rectangles represent

    (i)   Entity Sets

    (ii) Attributes

    (iii) Database

    (iv) Tables

(d)   Which of the following is *not* a Binary Operation ?

    (i)   Project

    (ii) Union

    (iii) Set-difference

    (iv) Cartesian Product

(e)   Command to remove a relation from an SQL database is

    (i)   Delete Table < table name >

    (ii) Drop Table < table name >

    (iii) Rename Table < table name >

    (iv) None of the above

(f)   ACID properties refer to

    (i)   Atomicity, Consistency, Isolation, Durability

    (ii) Atomicity, Consistency, Integrity, Durability

    (iii) Atomicity, Concurrency, Integrity, Durability

    (iv) Atomicity, Concurrency, Isolation, Durability

(g) In a Database, to avoid the problems of concurrent updates we use

(i) Pauses

(ii) Locks

(iii) Halts

(iv) Breaks

2. (a) What is a Database Management System ? Explain its applications in the modern day scenario. 7

(b) What is an Entity ? What do you understand by ER-Diagram ? Construct an ER-Diagram for your department mentioning its entities, their attributes and their relations. 7

3. (a) Describe the Relational Model in detail, using suitable examples. 7

(b) Differentiate between Primary Key, Candidate Key and Foreign Key, using suitable examples. 7

4. (a) Explain the form of basic SQL queries along with examples. 7

(b) What are SQL triggers ? Explain the various constraints on SQL triggers. 7

5. (a) Differentiate between the FIRST and SECOND normal form using suitable examples. 7

(b) Using suitable examples, explain the Multi-valued dependencies in detail. 7

6. (a) Explain the concept of Hash based indexing in detail. 7

(b) What is File Organization ? Explain how data is stored on external storage. 7

7. (a) Explain the concept of Transaction Management in detail. 7

(b) Differentiate between Serializability and Recoverability in detail. 7

8. Write short notes on any *four* of the following : $4 \times 3\frac{1}{2} = 14$

(a) Data Models

(b) Views

(c) Logical Database Design

(d) Active Databases

(e) Primary vs Secondary Indexes

(f) Locks