00598

No. of Printed Pages : 4

BICS-038

DIPLOMA – VIEP – COMPUTER SCIENCE AND ENGINEERING (DCSVI)

Term-End Examination

December, 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) Which of the following is a Database Language ?

(i) Data Definition Language

(ii) Data Manipulation Language

(iii) Query Language

(iv) All of the above

(b) Set of permitted values of each attribute is called

(i) Domain

(ii) Tuple

(iii) Schema

(iv) Relation

(c) In an ER diagram, ellipses represent

(i) Entity Sets

(ii) Attributes

(iii) Database

(iv) Tables

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

(i) Rename

(ii) Project

(iii) Union

(iv) Select

(e) A primary key must be

(i) Unique

(ii) Not Null

(iii) Both (i) and (ii)

(iv) None of the above

(f) BCNF stands for

(i) Bit Code Normal Format

(ii) Boyce Codd Normal Form

(iii) Binary Code Normal Form

(iv) None of the above

(g) ACID properties refer to

(i) Atomicity, Consistency, Isolation, Durability

(ii) Atomicity, Consistency, Integrity, Durability

(iii) Atomicity, Concurrency, Integrity, Durability

(iv) Atomicity, Concurrency, Isolation, Durability

2. (a) What are the Database Applications ? Compare the database system against the traditional file system. 7

(b) Describe the various levels of data abstraction in a database management system. 7

3. (a) Explain the concept of Integrity Constraint in detail. Also describe the process of destroying tables. 7

(b) Using suitable examples, explain the Selection and the Projection set operations. 7

4. (a) Assuming that there is a Table Emp (Emp_id, Name, Department, Salary), write the SQL queries for the following cases : 7

(i) Show all contents of the table Emp.

(ii) Show the Employee record who has Maximum Salary.

(iii) Show the total number of employees in the table.

(iv) Delete the table Emp.

(b) Explain the various aggregative operators using suitable examples. 7

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

(b) Using a suitable example, explain Outer Join in detail. 7

6. (a) What is Indexing ? Explain the Tree-based Indexing in detail. 7

(b) What are Dependency Preserving Decompositions ? Explain using suitable example. 7

7. (a) Explain the concept of Transactions and Schedules. 7

(b) Explain how Concurrency is achieved without Locks. 7

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

(a) Instance and Schema

(b) Relational Algebra

(c) SQL Triggers

(d) BCNF

(e) Cluster Indexes

(f) Concurrency Control
