B.TECH. – VIEP - CSE

Term-End Examination

June, 2013

BICS-011 : DATABASE MANAGEMENT SYSTEM

Time : 3 hours   *Maximum Marks : 70*

Note : Seven questions are required to be answered.

1. (a) Consider the following set of functional   8
        dependency for the schema

        R = (A, B, C, D, E)

        A → BC

        CD → E

        B → D

        E → A

        Find the candidate key for R. Also compute
        the canonical cover F_c.

    (b) Write a note on Armstrong's axioms.   2

2. (a) What is cascading schedule ? How to   5
        prevent such situation in transaction
        management ?

    (b) Explain the normal forms due to functional   5
        dependencies.

3. (a) Write down the functionalities of database   5
       manager of DBMS.

   (b) Explain how the data is organized in   5
       network DBMS ? How it is different from
       hierarchal DBMS ?

4. (a) Considering banking schema, write any five   6
       SQL queries and their corresponding
       relational algebra expressions.

   (b) Draw the ER diagram for banking system.   4

5. Differentialte between :   2.5x4=10

   (a) Composite and multi valued attribute

   (b) Primary key and superkey

   (c) Weak entity set and strong entity set

   (d) Specialization and generalization

6. (a) What are the various types of failures that   5
       can occur in database ?

   (b) Discuss the log based recovery mechanism.   5

7. (a) Explain the various types of outer join with   4
       an example.

   (b) What is relational model ? how to convert   6
       ER model into relational model ? Explain
       with example.

8. (a) Compare the deferred and immediate modification versions of the log - based recovery in terms of ease of implementation and overhead cost. 6

(b) Distinguish between Storage Manager and Query processor. 4

9. (a) List four significant differences between a file - processing system and a DBMS. 5

(b) Explain BCNF with an example. 5

10. Write short notes on *any two* : 5+5=10

(a) Lossless Decomposition

(b) Relationship set

(c) Aggregate functions

(d) Normalization