Roll No. .....

BCA–502(O)

B. C. A. (Fifth Semester)
EXAMINATION, Dec., 2013

(Old Course)

Paper Second

BASICS OF DATABASE MANAGEMENT SYSTEM

Time : Three Hours] [*Maximum Marks : 75*

Note : Section A is compulsory. Attempt any *seven* questions from Section B and any *one* question from Section C.

Section—A 6 each

(Numerical/Analytical/Problematic Questions)

1. What is meant by dependency preservation property for a decomposition ? Why is it important ?
2. What is minimal set of functional dependencies ? Does every set of dependencies have a minimal equivalent set ? Is it always unique ?
3. What are Armstrong's Inference rules ? Explain.

Section—B 6 each

(Short Answer Type Questions)

4. Define join dependencies and 5th normal form. Why 5th normal form is also called PJNF ?

5. Consider the relation schema R (ABC) with FD's AB → C and C → A. Show that the schema R is in 3 NF but not in BCNF. Also determine the minimal keys for R.
6. Describe PROJECT operation in detail.
7. How does OUTER JOIN operation differ from INNER JOIN operation ? Explain giving example.
8. Discuss the entity integrity and referential integrity constraints. Why is each considered important ?
9. Define the following terms :
   (i) Candidate key
   (ii) Super key
   (iii) Foreign key
   (iv) Primary key
10. Discuss various threats to the data base security and the measures to keep them away.
11. Why do you understand by data models ? Discuss network model in detail.
12. Explain DDL and DML in detail.
13. What are different characteristics of relations ? Explain giving example.

Section—C

15 each

(Long Answer Type Questions)

14. What are different types of anomalies for a relation ? Explain with example.
12. Create an ER diagram for a BANK database. Each bank can have multiple branches and each branch can have multiple accounts and loans.