

Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

**BCA (2013 & Onward) (Sem.-4)**  
**DATABASE MANAGEMENT SYSTEMS**  
Subject Code : BSBC-404  
Paper ID : [B0243]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and a student has to attempt any FOUR questions.

**SECTION-A**

**1. Answer briefly :**

- a) What are the major benefits of database systems?
- b) What is an ER diagram?
- c) Why do we need to normalize databases?
- d) Distinguish between database schema and database instance.
- e) What is Normalization?
- f) Differentiate between tuple relational calculus and domain relational calculus.
- g) What are the problems arising out of concurrent access of databases?
- h) What is domain integrity?
- i) What is the difference between authentication and authorization?
- j) Define disaster management.

## SECTION B

2.
  - a) Explain the responsibilities of a Database Administrator.
  - b) Differentiate between physical and logical data independence.
3. What do you understand by Relational model of database system? Elaborate the major characteristics of relational database management system.
4. What are the various operators used in Relational Algebra? Discuss each with an example.
5. Define various types of functional dependencies. Discuss multi-valued dependency in detail.
6. Define database recovery. What do you mean by forward recovery and backward recovery? What are the various recovery data collection techniques?
7. Define Distributed databases. What are the various considerations for distributing the database? Discuss the structure of a distributed database.