Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 07

B.Sc.(CS) (2013 & Onwards)   (Sem.–3)
DATABASE MANAGEMENT SYSTEMS
Subject Code : BCS-306
Paper ID : [71778]

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 problems of file processing systems?

   b) Differentiate between external level and internal levels of database architecture.

   c) Why do we need mappings between the levels of DBMS architecture?

   d) What are the types of relationships in ER model?

   e) Why do we need to normalize databases?

   f) What are the problems of concurrent uses of databases?

   g) Define and distinguish between database protection and security.

   h) Define the terms: Tuple, Schema, Domain and Instance.

   i) What is disaster management?

   j) What is equi-join? Explain with an example.

SECTION-B

2. What do you mean by database system? Explain in detail the advantages of a database system.

3. Discuss in detail the features of Entity Relationship model. Also explain the rules for drawing ER diagrams.

4. What are data models? How do you classify data models? Discuss in detail the characteristics of the Relational data model.

5. What is Relational algebra? What are the various relational operators? Define and discuss each with an example.

6. Define various types of functional dependencies. Discuss multi-valued dependency in detail.

7. What is the difference between database security and recovery? Discuss the various methods of database recovery.