Code: **CSCS1T4**

**I M.Tech - I Semester - Special Supplementary Examinations
March 2019**

DATABASE MANAGEMENT SYSTEMS
(COMPUTER SCIENCE & ENGINEERING)

Duration: 3 hours   Max. Marks: 70

Answer any FIVE questions.   All questions carry equal marks

1. a) Explain about different kinds of data models.   9 M

   b) List any four applications of DBMS.   5 M

2. a) Briefly explain about Entity-Relationship model.   7 M

   b) Construct an ER diagram for banking enterprise.   7 M

3. Write about the following:
   a) Operations in Relational Algebra   7 M

   b) Relational calculus and Tuple Relational Calculus   7 M

4. a) What is the difference between BCNF and 3NF? .   7 M

   b) Explain 4NF with an example.   7 M

5. a) Briefly explain about RAID.   7 M

   b) Briefly explain about Organization of records in files. 7 M

6. a) Explain the General Transformation Rules for Relational
     Algebra Operations.   9 M

   b) Explain typical steps when processing a high-level query.
     5 M

7. Describe in detail the following:
   a) Serializability and Recoverability.   7 M
   b) Desirable Properties of Transactions.   7 M

8. Describe in detail the following:
   a) Lock management and concurrency control.   7 M
   b) i) ARIES   4 M
     ii) Shadow Paging   3 M