SE- sem IV (CBCS) - Computers   31/05/16
Database Management System

Q.P. Code : 541600

(3 Hours)   **Total Marks: 80**

N.B.: (1) Question No.1 is **compulsory**.
   (2) Solve any **three** questions out of the remaining questions.
   (3) Make **suitable** assumptions if **needed**.

1. (a) Explain BCNF with example.   5
   (b) Write short note on Deadlocks.   5
   (c) Explain Total and Partial Participation.   5
   (d) Discuss the role of Database Administrator.   5

2. (a) Discuss steps in query processing. Also describe cost based query optimization.   10
   (b) Draw an ER Diagram and convert it into relational model for a Company,   10

      which has several Employees working on different types of Projects. Several

      Employees are working for one Department, every Department has a Manager.
      Several Employees are supervised by one Employee

3. (a) Explain types of integrity constraints with example.   10
   (b) Discuss Data Definition and Manipulation Commands in SQL.   10

4. (a) Describe the overall architecture of DBMS with suitable diagram.   10
   (b) Explain Security and Authorization in DBMS.   10

5. (a) Explain the following Relational Algebra Operations with example: 10
       i. Natural Join   iii. Generalized Projection
       ii. Set Intersection   iv. Division Operator

   (b) Explain Assertions and Triggers in detail.   10

6. Write Short notes on: 20
   (a) ACID properties
   (b) Shadow Paging
   (c) Specialization and Generalization
   (d) Aggregate Functions in SQL