SE - Sem IV (CBGS) - 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, 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 **10**

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
