

**September 2011**

**Bachelor of Computer Application (BCA) Examination  
IV Semester**

## Data Base Management System

Time : 3 Hours ]

[ Max. Marks : 50

**Note : Attempt all questions, choosing any two parts of each question.  
Each question carries equal marks.**

1. (a) Define Data Model. Explain the different types of data models with relevant examples.  
(b) Explain the system structure of a Database System with neat block diagram.  
(c) What are the different types of Database Users ? Discuss the main activities of each.
2. (a) Design an E-R Diagram for a Banking Enterprise.  
(b) Explain Weak Entity Set with an example.  
(c) Explain various mapping constraints with example
3. (a) Write the difference between DELETE and TRUNCATE Commands.  
(b) What is Sub-query ? Explain the properties of Sub-query.  
(c) Consider the following relations :  
EMP (eno, ename, dateofbirth, address)  
DEPT (dno, dname, floor, budget)  
Works-in (eno, dno, pct-time)  
An employee can work in any number of departments for a percentage of time determined by pct-time. On each floor there can be more than one department. Write the SQL queries with which we can find out:  
(i) Find employees who work in all departments  
(ii) Find employees who do not work all the time.
4. (a) What is Functional Dependencies ? Explain the role of functional dependencies in the process of normalization.  
(b) Discuss about Triggers. How do trigger offer a powerful mechanism for dealing with the changes to database with suitable example?  
(c) What is Normalization ? Explain the various normalization techniques with suitable example.
5. (a) What is RDBMS ? What are the design goals of a good relational database design ?  
(b) Write the Codd's 12 rules for the relational model.  
(c) How would you ensure the database security, integrity and privacy at the data centre?

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