S.E / CO / Sem-IV / CBSGS / DMS 09/12/14

QP Code :12512

(3 Hours) **[Total Marks : 100**

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) Define Specialization and Generalization with an example. **5**
   (b) Write about Aggregate Functions in SQL. **5**
   (c) Discuss Referential Integrity Constraints. **5**
   (d) Explain Total Participation and Partial Participation with example. **5**

2. (a) Explain the following Relational Algebra Operations with example :— **10**
   (i) Set Intersection (iii) Generalized Projection
   (ii) Division Operator (iv) Natural join
   (b) Draw an ER Diagram for a banking enterprise. Convert it into relational model. **10**

3. (a) What is Normalization ? Explain INF, 2NF, 3NF and BCNF giving examples. **10**
   (b) What is an attribute ? Discuss various types of attributes with examples. **10**

4. (a) Explain sort-merge join algorithm in query processing. **10**
   (b) Describe conflict serializability and view serializability with examples. **10**

5. (a) Explain database system architecture in detail. **10**
   (b) What do you mean by Data Modeling ? Discuss different types of Models. **10**

6. Write Short notes on :— **20**
   (a) ACID Properties
   (b) Steps in Query Processing
   (c) Data Control Commands in SQL
   (d) Security in Database.

GN-Con.:10581-14.