Unit-V

9. a) Explain hierarchical queries, inline queries and flash back queries. 6

   b) What are user defined functions in oracle. 4

   c) Explain Data dictionary. 4

OR

10. a) What are cursors? Explain nested and parameterized cursors. 7

    b) Explain: 7

    i) Hierarchical queries

    ii) Inline queries

    iii) Flashback queries.

Total No. of Questions :10] *[Total No. of Printed Pages :4*

Roll No .....

CS - 503

B.E. V Semester

Examination, December 2013

Database Management System

Time : Three Hours

Maximum Marks : 70

Note: 1. Attempt any one question from each unit.

2. All questions carry equal marks.

Unit-I

1. a) Explain system structure of DBMS. 4

   b) Explain the following terms: 6

   i) Database schema

   ii) Data Independence

   c) Differentiate between two tier and three tier client/server architecture. 4

OR

2. a) Explain the following: 6

   i) Mapping cardinalities

   ii) Participation constraints.

   iii) Attribute inheritance

   b) Explain the tabular representation of the following: 8

   i) Strong entity set

   ii) Weak entity set

   iii) Relation ship sets

   iv) Generalization

Unit-II

3. a) Explain the following with examples: 7

   i) Super key

   ii) Primary key

   iii) Alternate key

   iv) Extensions and Intensions

   b) What is union compatibility? Why do the union intersection and set difference operations require that the relations on which they are applied are union compatible. 7

OR

4. a) Explain natural join, outer join, full outer join, left outer join and that a join with examples. 7

   b) Consider the following database with primary key under lined. 7

   i) Employee - (ENO, DOB, Name, Address, Sex, Salary, Dept-No)

   ii) Department - (Dept-no, Dept-Name):

   For each of the following queries give expression in SQL

   i) Retrieve the names of employees in department - 5

   ii) Retrieve names of all employees who are not in department - 5

   iii) Retrieve the average salary of all female employees

   iv) Write SQL DDL statements of above database.

Unit-III

5. a) Consider the relation R(A, B, C, D, E, F, G, H, I, J) and set of dependencies. 7

$$F = \{\{A,B\} \rightarrow \{C\}, \{A\} \rightarrow \{D,E\}, \{B\} \rightarrow \{F\},$$

$$\{F\} \rightarrow \{G,H\}, \{D\} \rightarrow \{I,J\}$$

   What are the keys of R, Decompose R in 2NF and 3NF?

   b) Differentiate between 3NF and BCNF with examples. 7

OR

6. a) Consider the relational schema R(A, B, C) with FD's $AB \rightarrow C$, and $C \rightarrow A$. Show that the schema R is in 3NF but not in BCNF. Also determine minimal keys of R. 7

   b) Explain various steps of query optimization. Also discuss optimization methods. 7

Unit-IV

7. a) Explain various transaction states with their description. Also discuss its state diagram. 7

   b) State and write ahead log rule. Why is the rule necessary? 4

   c) Explain check point record. 3

OR

8. a) State two phase locking theorem. Explain how two phase locking deals with RW, WR, and WW conflicts. 7

   b) Transaction usually cannot be nested inside one another. Why not? 3

   c) What are the recovery implication of physical writing database buffers at COMMIT. 4