END TERM EXAMINATION

Third semester [MCA] DECEMBER 2010

Paper Code: MCA 203 **Subject: Data Base Management System**
Paper ID:44203

Time: 3 Hours **Maximum Marks: 60**

Note: Attempt five questions. Select one question from each unit including Q.1 which is compulsory.

Q1 Answer the following questions briefly:- **(2x10=20)**

(a) Why are tuples in a relation not ordered?
(b) Why is it important to maintain data independence in a database?
(c) Assume that a relation instance has a degree of 7 and a cardinality of 15. How many attributes does this relation have and how many different rows are currently present in the relation?
(d) Write the SQL code to display the resorts that are both golf and beach destinations or the INTERSECTION of the two tables.
(e) Show that every two-attribute relation is in BCNF.Tht is,if r(X,Y) athen (X,Y) is in BCNF.
(f) What are some reasons that the advancement of the internet and ditrubetes databases presented new problems for database security?
(g) List the steps necessary in the design of the database.
(h) What is a query language called relationally complete?
(i) What is the two phase locking protocol?
(j) How many different join orders are there for a query that joints 10 relations?

UNIT-I

Q2 (a) Define foreign key. What is this concept used for? How does it play a role in the joint operation? Describe the role of DBA in the management of a database. **(5)**

(b)Describe the three levels of database system architecture? Why do we need mapping between different levels? **(5)**

Q3 (a)What is a data model?Give different catogries of data models with their advantages and disadvantages over one another.Explain E-R model in detail. **(5)**

(b)Identify two entities that might be important for a theater.List at least three attributes for each entity.Then show what the entities and attributes would look like in an E-R diagram. **(5)**

UNIT-II

Q4 (a)List the operations of relational algebra.Explain in detail function of each with suitable examples. **(5)**
(b)Explain the role of SQL.What are the various components of SQL? Explain in detail. **(5)**

Q5 (a) What are the properties of a table? Also, explain how relationship is established between two tables in Oracle RDBMS with the help of a suitable example? **(5)**
(b) Discuss the reason for converting SQL queries in to relational algebra queries before optimization is done. **(5)**

UNIT-III

Q6 (a) How does tuple relational calculas differ from domain relation calculus? **(5)**
(b) What is meant by a safe expression in relational calculus? **(5)**

Q7 Explain the concept of normalistion.Why do we need normalization? Define 1NF, 2NF, 3NF, 4NF and BCNF with the help of suitable examples. **(10)**

UNIT-IV

Q8 (a) What is certify lock? What are the advantages and disadvantages of using certify lock? **(5)**
(b)What additional functions does a DDBMS have over a centralized DBMS? **(5)**

Q9 Write short notes on the following: **(5+5)**
(a)Concurrency Control Techniques (b) Recovery Techniques

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