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67074

M.C.A. 2nd Semester (with new notes) M.M. 80 w.e.f. May, 2013

Examination–May, 2017

DATABASE MANAGEMENT SYSTEMS (NEW)

Paper-MCA-204

Time : 3 hours ***Max. Marks : 80***

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Attempt **five** questions in all. Question No. 1 is **compulsory** and attempt **four** more questions by selecting **one** question from each unit. All questions carry equal marks.

1. (a) What are single valued and multi-valued attributes ?

(b) What is database schema ?

7. (a) What is the importance of normalization in database design ? Explain 1NF, 2NF and 3NF with the help of example.

(b) Why should NULL in a relation be avoided as far as possible ? Discuss the problem of spurious tuples and how you may prevent it ?

UNIT-IV

8. (a) What is meant by the concurrent execution of database transactions in a multiuser system ? Discuss why concurrency control is needed ?

(b) Explain the desirable properties of transactions.

9. (a) Discuss the problem of deadlock and starvation, and the different approaches to dealing with these problem.

(b) How is locking implemented ? What is the role of the lock table in implementation ? How are requests to lock and unlock a data item handled ?

(c) What is candidate key ?

(d) What is relational algebra ?

(e) Which clause of the SELECT command can be used to change the order of tuples in a relation ? Give an example.

(f) What is insertion anomaly ?

(g) What is COMMIT statement in SQL ?

(h) What are the two modes of locking ?

UNIT-I

2. (a) Explain the various functional components of DBMS with the help of a diagram.

(b) What do you mean by data independence ? State its importance in database technology.

3. (a) Explain different types of DBMS user's with their jobs and responsibilities.

(b) Discuss the various E-R diagram notations and draw an E-R diagram for banking system. Make your own assumptions about the system.

UNIT-II

4. (a) Discuss the characteristics of relations that make them different from ordinary tables and files.

(b) What is the use of constraints ? Explain primary key constraints, unique constraints and check constraints with the help of an example.

5. (a) What is the significance of creating a view ? Write commands to create, modify and removing a view.

(b) What is relational Calculus ? How formulae are formed for domain and tuple Calculus ? Explain by giving an example.

UNIT-III

6. (a) Why do you use SELECT command in SQL ? What is the difference between WHERE and HAVING clause ? Explain with the help of an example.

(b) What is the role of aggregate functions in SQL queries ? Explain all aggregate functions with the help of examples.