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DE-5701

M. C. A. (Sem. I) Examination

March/April – 2016

Paper : 102 : Database Management Systems

(Old & New Course)

Time : 3 Hours] [Total Marks : 70

Instruction :

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **M. C. A. (Sem. I)**

Name of the Subject :

☛ **Paper : 102 : Database Management Systems**

☛Subject Code No. : **5 7 0 1** ☛Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

1 Attempt any **TWO** **[14]**

A. State & explain any four disadvantages of traditional file oriented approach of storing data.

B. Write a note on data abstraction.

C. Explain CREATE TABLE command with all possible options.

2 Attempt any **TWO** **[14]**

A. Explain cardinality mapping. Discuss significance of cardinality mapping in database design.

B. Explain 'outer join' giving suitable examples.

C. Explain aggregate functions in SQL with example.

3 Do as directed **[14]**

A. Differentiate following concepts giving proper example **[12]**

1) Super key, candidate key and primary key.
2) Function dependency and full function dependency.
3) 'where' and 'having' clauses of SELECT statement.

B. Define - relation schema **[02]**

4 Attempt any **TWO** **[14]**

A. Define BCNF. Give an example of a table which is not in BCNF but is in 3NF. Justify your answer.

B. Explain loss less join decomposition giving suitable example.

C. Explain E-R diagram with a suitable example.

5 Do as directed **[14]**

A. Given following tables, write SQL statements for the queries that follows. **[08]**

BranchMaster (BranchCode, BranchName, City)
Employee (EmployeeCode, Name, Designation, BranchCode)

1) List name of employee along with their branch name.
2) List number of employees working in each branch.
3) Find the branch having the highest number of employees.
4) List employee having designation as 'Manager'

B. Consider the following relation schema and a set of functional dependencies that holds on that schema.

Student (RollNo, SemNo, ProjectId, ProjectTitle)
RollNo, SemNo -> ProjectId
ProjectId -> ProjectTitle

1) Find the Candidate Key for given relation **[02]**
2) State in which normal form the relation is? Justify your answers **[04]**