

67074

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

Examination-May, 2015

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. Answer the following questions :

- (a) What is the difference between data and information ?
- (b) What is data independence ?

- (c) Describe how strong and weak entity differ.
- (d) What is relational calculus ?
- (e) Which operator of SQL is used to specify patterns in the queries? Explain with the help of an example.
- (f) What is the difference between Where and Having clauses in SQL.
- (g) What do you mean by decomposition of a relation?
- (h) What is lock conversion ?

UNIT-I

- 2. (a) Discuss the advantages of database system. Explain the various cost and risk factors involved in implementing a database system.
- (b) Distinguish between conceptual schema and external schema in DBMS architecture.
- 3. (a) What are the different types of database users? Discuss the main activities of each.
- (b) What is E-R model? List the various symbols along with their use in E-R model.

UNIT-II

4. (a) Define following terms with the help of example:
- (i) Domain
 - (ii) Tuples
 - (iii) Attribute
 - (iv) Relation
- (b) Discuss the entity integrity and referential integrity constraints. Why each is considered important?
5. (a) What are the unary operations in relational algebra? Explain with the help of an example.
- (b) What is the role of join operations in relational algebra? Describe various types of join operations.
- <http://www.HaryanaPapers.com>

UNIT-III

6. (a) Write syntax of the following SQL commands and give an example of each :
- (i) Alter
 - (ii) Insert
 - (iii) Delete
 - (iv) Update
- (b) List and explain different types of aggregate functions with the help of an example.

7. (a) What are the features of a good relational database design? Explain various update anomalies that can arise in a relational database.
- (b) Explain Third Normal Form (3NF) and Boyce-Codd Normal Form (BCNF) with the help of an example.

UNIT-IV

8. (a) What do you understand by concurrency? Discuss the various problems associated with it in DBMS.
- (b) Explain the following terms with the help of example in database transactions :
- (i) Atomicity
 - (ii) Consistency
 - (iii) Isolation
 - (iv) Durability
9. (a) What do you understand by lock compatibility? Discuss in detail with an example.
- (b) What is deadlock? What are the techniques to prevent deadlock?