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(2124)

1865

MBA 3rd Semester Examination

Relational Database Management System (NS)

IT-01

Time : 3 Hours **Max. Marks : 60**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

SECTION - A

Attempt all questions. Each question carries 2 marks.

1. (a) Discuss Instances and schemas.

   (b) Explain the two types of Data Independence.

   (c) Define Data Dictionary.

   (d) What do you mean by Degree and Domain of a Relation?

   (e) What are the types of attributes in the ER model?

   (f) Explain shortly the four properties or objectives of normalization

   (g) What is lossy decomposition?

   (h) What is a super key? Illustrate with example.

   (i) What are aggregate functions? And list the aggregate functions supported by SQL.

   (j) Name the various privileges in SQL. (2×10=20)

[P.T.O.]

SECTION - B

Attempt any four questions. Each question carries 5 marks.

2. Explain the design issues of ER-model.
3. Why do we need mapping between different schema level ?
4. Define the term data model. Compare various data models.
5. Give the difference between relational algebra and relational calculus.
6. Explain the term partial dependency, fully functional dependency, transitive dependency and trivial functional dependency.
7. Explain how various integrity constraints are applied on various data elements in SQL. (4×5=20)

SECTION - C

Attempt any two questions. Each question carries 10 marks.

8. What do you mean by distributed database? Discuss various design issues in distributed database.
9. Discuss various components of E-R Diagram. Suppose an entity type STUDENT has the attribute such as name, address, phone, activity, number of years and age. Activity represents some campus based student activity, while number of years represents the number of years the student engaged in these activities. A given student may engage in more than one activity. Draw E-R diagram for this situation.
10. In a relation R(A,B,C,D,E,F,G,H,I,J), different set of FDs are given as G=({A,B}→{A}→{D,E}→{E,F},{A,D}→{G,H}, {A}→{I}, {H}→{J})
    (a) What is the key of R?
    (b) Decompose R into 2NF, Then 3NF relations.
11. Discuss various Concurrency, problems with suitable examples. (2×10=20)