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10MCA34

Third Semester MCA Degree Examination, December 2012
Database Management Systems

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1
 - a. Define DBMS. Discuss the advantages of DBMS over traditional file management system. (06 Marks)
 - b. Discuss in detail, the component modules of DBMS and their interaction with DBMS. (10 Marks)
 - c. With neat diagram, explain 3 – schema Architecture. (04 Marks)
- 2
 - a. Define the following with examples : i) Primary key ii) Candidate key iii) Composite key iv) Attribute v) Schema. (10 Marks)
 - b. Construct an ER – Diagram for company database with proper assumptions. (10 Marks)
- 3
 - a. List any five relational Algebra operators along with their purpose and syntax of using them. (10 Marks)
 - b. Discuss the usage of DDL, DML, TCL and DCL languages, with suitable examples. (10 Marks)
- 4
 - a. Explain the seven step Algorithm to convert the basic ER – model construct into relations, with suitable examples. (12 Marks)
 - b. Explain the following : i) Embedded SQL ii) Dynamic SQL. (08 Marks)
- 5
 - a. Differentiate a subquery and a correlated subquery. (06 Marks)
 - b. Consider the insurance database given below using suitable keys :
 PERSON (driver_id : string, name : string, Address : string)
 CAR (Regno : string, model : string, Year : int)
 ACCIDENT (Report_number : int, acc_date : date, Location : string)
 OWNS (driver_id : string, Regno : string)
 PARTICIPATED (driver_id : string, Regno : string, Report_number : int, damage amount : int)
 i) Create the above tables by properly specifying the primary keys and foreign keys.
 ii) Enter atleast five tuples for each relation.
 iii) Demonstrate how you update the damage amount for the car with specific Regno in the accident with particular report-number).
 iv) Find the number of accidents in which car belonging to a specific model were involved. (14 Marks)
- 6
 - a. Discuss in detail, the four informal measures of quality in relation schema design. (10 Marks)
 - b. Explain 1NF, 2NF and 3NF, with suitable examples. (10 Marks)
- 7
 - a. What are ACID properties? Illustrate with examples. (08 Marks)
 - b. Explain strict 2PL – protocol. (08 Marks)
 - c. State two phase – locking protocol. (04 Marks)
- 8
 - Write short notes on the following : (05 Marks)
 - a. Data – independence. (05 Marks)
 - b. Cursors. (05 Marks)
 - c. Joins. (05 Marks)
 - d. Data Dictionary. (05 Marks)
