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322556(22)

B. E. (Fifth Semester) Examination, April-May/ Nov.-Dec, 2020

(New Scheme)

(CSE Branch)

DATABASE MANAGEMENT SYSTEM

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Attempt all questions. Part (a) of each question is compulsory. Attempt any two parts from (b), (c) and (d). State assumptions clearly (if any).*

Unit-I

1. (a) What is Data Independence?   2

   (b) Explain ANSI/SPARC 3 level architecture of DBMS.   7

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(c) Explain Strong and Weak entity sets with example.   7

(d) Draw an ER diagram for keeping track of the exploits of your favorite sports team. You should store the matched played, the scores in each match, the players in each match and individual player statistics with each match. Summary statistics should be modeled as derived attributes.   7

Unit-II

2. (a) What is an Unsafe Querry? Explain with example.   2

   (b) Explain 6 basic operations of Relation Algebra with example. https://www.csvtuonline.com   7

   (c) What is a View? What are the advantages and disadvantages of using a VIEW?   7

   (d) Consider a relation schema :

   EMP (Empno, Ename, Job, Sal, Deptno)
   DEPT (Deptno, Dname, Location)

   Write the following queries in Relational Algebra.   7

   (i) Display employee name of employee who works for SALES Department.

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(ii) Display employee name whose salary is greater than RAHUL.

(iii) Display department wise minimum salary of each department.

(iv) Display department name in which RAHUL is working.

(v) Display the job title which is present in department 10 and 20.

(vi) Update the employees so that RAHUL now work in department 20.

(vii) Delete the employee whose salary is less than 10,000.

Unit-III

3. (a) Explain GROUP BY clause with example. 2

(b) Explain various integrity constraints specified on SQL with example. 7

(c) What is a Cursor? Explain cursor attributes with example. 7

(d) Given a relation schema below :

Supplier (sno, sname, status, city)

Parts (pno, pname, color, weight)

Supplies (sno, pno, qty)

Write SQL queries for following : 7

(i) Get supplier names for suppliers who supply part P2.

(ii) Get supplier numbers for suppliers who supply at least one red part.

(iii) Get all shipments where the quantity is between 400 and 850 inclusive.

(iv) Get all part number which are supplied to supplier who live in London.

(v) Get supplier number who supplies maximum quantity.

(vi) Increase the quantity of part P1 by 10%.

(vii) Change the color of Red parts to Green.

Unit-IV

4. (a) Explain trivial functional dependency with example. 2

(b) Explain 3NF and BCNF with example. 7

(c) Explain 2 phase locking protocol with example. 7

(d) Consider a relation schema R(A, B, C, D, E) with a set of functional dependencies $F = \{AB \rightarrow C, B \rightarrow D, CD \rightarrow E, E \rightarrow A\}$. Find the candidate keys of R.   7

Unit-V

5. (a) What is Log Record?   2

    (b) Explain deferred update method for recovery of database with example.   7

    (c) Explain B+ tree index with example.   7

    (d) Explain different types of database storage failures.   7