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Final Assessment Test - November 2018

Course: CSE2004 - Database Management Systems

Class NBR(s): 5537 / 5538 / 5539 / 5540 / 5541 / 5542 / 5543 / 5544 / 5545 / 5546 / 5547 / 5549

Time: Three Hours

Slot: D1

Max. Marks: 100

PART - A (8 X 5 = 40 Marks) Answer ALL Questions

Write the advantages of database system over file processing system.

2. Describe three schema architecture of a DBMS.

. 3. Define the following terms

of Primary key of Foreign key -c) Super key

A. Explain different notations used in ER model.

5. Consider the following schema and write the query in SQL.

Emp(emp_id.Ename,ssn,bdate,address,sex,salary,super_ssn,ano)

Dept(dname,dno,mgr_ssn,mgr_strt_date)

Dept_location(dno,dlocation)

Project(pname,pno,plocation,dno)

It List the names and address of all employees who work for research department.

ii) List the top three employees in marketing department based on Seniority.

6. Describe the operators used in Relational Algebra.

Describe briefly properties of a transaction and draw state transition diagram.

Define trigger with an example.

PART - B (6 X 10 = 60 Marks) Answer any SIX Questions

Describe the following with neat diagram.

a. Query Processing

b. Storage Manager

c. Transaction Manager

10. Draw an ER diagram for University database.

12. Consider the following database schema and write queries in SQL.

Employee (First Name, Mid Name, Last Name, SSN Number, Birthday, Address, Sex, Salary,

Supervisor SSN, Department Number)

Department (Department Name, Department Number, ManagerSSN, ManageStartDate)

Project (Project Name, Project Number, Project Location, Department Number)

(a) Create table department. Set Department number as primary key, department name as not null, manager ssn refers to supervisor ssn of employee table and when this manager ssn is deleted then it need to be set as null and when it is updated the change should be in effect in employee table too.

- For every project located in 'Stafford', list the project number, the controlling department [2] number, and the department manager's last name, address and birth date.
 - For each employee, retrieve the employee's name, and the name of his or her immediate [2.5] supervisor.
- Make a list of all project numbers for projects that involve an employee whose last name is [2.5] 'Smith' as a manager of the department that controls the project.
- 12. Explain 3NF and BCNF in detail. Why BCNF is better than 3NF with example?
- 13. a) Consider the situation given in Table, given below showing operations performed by two [5 transactions, Transaction- A and Transaction- B with respect to time.

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Transaction- A	Time	Transaction- B
	t0	
Read X	t1	
	t2	Read X
Update X	t3	
	t4	Update X
	t5	

List out the problems caused during concurrent execution.

Consider the situation given in Table.

Transaction- A	Time	Transaction- B
	t0	
	t1	Update X
Read X	t2	
	t3	Rollback
	t4	

List out the problems caused during concurrent execution.

- 24. Explain database recovery mechanisms used in database with suitable example.
- 18. Describe different schemes used for concurrency control in database.
- 18. What is the Graph database and write the difference between Graph DB and RDB?

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[5]