CSE 311 (R-15)

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III/IV B.Tech. DEGREE EXAMINATIONS, NOVEMBER- 2019

First Semester

COMPUTER SCIENCE ENGINEERING

DATA BASE MANAGEMENT SYSTEM

Time: Three Hours **Maximum marks:60**

Answer Question No.1 Compulsory **6X2=12 M**

Answer ONE Question from each Unit **4X12=48 M**

1. a) What is Data Independence?
   b) Weak entity
   c) Grant and Revoke and their purpose
   d) Define query processing
   e) Difference between a candidate key and the primary key
   f) What are the reasons for using strict 2PL in many of the database systems?

UNIT-I

2. a) Write a brief on ER modeling. Explain various entity types and attribute types. Give an ER diagram to represent the same.
   b) Give a brief on challenges to build a DBMS.

(OR)

3. a) Explain the three level schema architecture of a database.
   b) Explain different data models.

UNIT-II

4. a) Using the schema: Sailor (Sailor id, Boat id, sailorname, rating, age), Re serves (Sailor id, Boat id, Day), Boat (Boat id, Boatname, Color) answer the following queries in relational algebra.

P.T.O

i) List the sailors who reserved a “red” colored boat on 09/09/2018.

ii) List the sailors who reserved every boat available on some or the other day.

iii) List the average age of the sailors who booked “red” color boat.

iv) List the boat_id of those boats which are not reserved by sailors having a rating more than 5.

b) Give a brief on domain relational calculus.

(OR)

5. a) What are the type of joins and explain each of them with suitable example.

b) How is the issue of whether a concept should be modelled as an entity or an attribute resolved? Explain.

UNIT-III

6. Discuss join dependency give example. Explain 5 NF.

(OR)

7. a) Define functional dependency. Give Armstrong’s axioms for Functional dependency and explain the same.

b) What are the problems that encounter with a bad schema design? Explain with suitable example for each.

UNIT-IV

8. Explain the concept of transaction atomicity. How does the two phase locking protocol ensures Serializability? Explain.

(OR)

9. Explain different File organizations in detail.

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III/IV B.Tech. (Supple) DEGREE EXAMINATIONS, JUNE- 2019

First Semester

COMPUTER SCIENCE ENGINEERING

DBMS

Time: Three Hours **Maximum marks:60**

Answer Question No.1 Compulsory **6X2=12 M**

Answer ONE Question from each Unit **4X12=48 M**

1. a) Weak Entity set
   b) Use of GROUP BY and HAVING clauses with an example
   c) Embedded SQL
   d) Explain the terms: Multivalued attribute, Derived attribute.
   e) Define 2NF
   f) RW and WW conflicts

UNIT-I

2. a) Explain various components of DBMS.
   b) Define entity, entity set and explain various types of attributes and how to represent them in ER diagram with a suitable example.

(OR)

3. a) What are the challenges in building a database? Explain.
   b) Draw an ER diagram to represent the employee and department entities and possible relationship among them.

UNIT-II

4. a) Define relational algebra, Tuple & Domain relational calculus. What are the differences between the two types of relational calculus?
   b) Explain selection, projection and cross product operations and their representation in relational algebra with suitable example for each.

P.T.O

(OR)

5. Consider the schema: Suppliers (sid, sname, saddress), Parts (pid, pname, color), Catalog (sid, pid, pcatg, cost). The key fields are underlined. Write the following queries in relational algebra.

    i) Find the names of suppliers who supply blue color part

    ii) Find the sids of suppliers who supply every red color part.

    iii) Find the pids of parts that are supplied by at least two different suppliers.

    iv) Find all the pids of parts supplied by supplier with sid=200

    v) Find the pids of parts supplied by every supplier at less than Rs 500.

    vi) Find the pids of parts that cost high in each category.

UNIT-III

6. a) What is join dependency? How is it different to that of multivalued dependency and functional dependency? Give an example for join dependencies and multivalued dependencies.

    b) Consider the relation scheme Emp Dept (Ename, SSN, Bdate, Address, Dnumber, Dname, DMGRSSN) and the following set of FD's
    F={SSN-> Ename, Bdate, Address, Dnumber, Dnumber-> Dname, DMGRSSN}
    Calculate the closure {SSN} + and {Dnumber} + with respect to F.

(OR)

7. a) Discuss the BCNF and III Normal Form with examples.

    b) Mention different data definition language statements and explain Create, Alter with suitable example for each.

P.T.O

UNIT-IV

8. a) Consider two transactions as follows:

Transaction 1: Fac salary:= Fac salary +1025.00

Transaction 2: Fac salary: = Fac salary * 1.1

What precaution, if any, would you suggest if these were to run concurrently? Write a pseudo code program for these transactions using an appropriate scheme to avoid undesirable results.

b) Write a note on indexed sequential files.

(OR)

9. What are differences among primary, secondary and clustering indices? How do these differences affect the implementation of indices? Which of the indexes are dense and which are not.