Distributed Databases

Q.P. Code : 581700

(3 Hours) | Total Marks : 80

N.B. : (1) Question No.1 is Compulsory.
      (2) Attempt any 3 questions out of the rest
      (3) Figure to the right indicate full marks.
      (4) All question carry equal marks.

1. a) What are advantages and disadvantage of Distributed DBMS   **5**
   b) What are the features of DDBMS?   **5**
   c) Explain the basic Timestamp Ordering Algorithm.   **5**
   d) What are the objectives of Distributed Query Processing?   **5**

2. a) What is horizontal and vertical fragmentation? What are the types of horizontal fragmentation. Perform horizontal fragmentation for student relation as given below.   **10**
Also give the correctness criteria for it.
Student (Studentrollno., Student Name, CourseName, Course Fees, year)

   b) What are the various kinds of transparencies in distributed database design? Explain each with the help of an example.   **10**

3. a) What are the various concurrency control techniques? Compare Lock based Concurrency Control strategies in detail.   **10**

   b) Compare Distributed Deadlock prevention to Distributed Deadlock Avoidance. Explain one scheme of Distributed deadlock Detection and Recovery.   **10**

4. a) A banking database should contain the customer's information along with the types of accounts customer is maintaining. Customer information is its full profile information along with his current address, PAN ID, adhar Card no. included and account information should include type of account (Saving, fixed, demat, recuring, current), date and time of access and the transactions details.   **10**
    i) Write the DTD rules for the above XML documents.
    ii) Create an XML schema for the above XML document.   **10**

   b) What are homogenous and heterogeneous database. Give the architecture of heterogeneous databases along with some query processing issues.

TURN OVER

10

5 a) What problems can occur in a distributed system due to the failure of link and partitioning of the network? What are the ways by which recovery can take place?

10

b) Explain the phases of query processing in distributed database.

20

6 Answer any two:
   a) Bond Energy Algorithm
   b) Design issues of Distributed Database
   c) 3PC
   d) Transaction management model for distributed System.

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