Sem - VII
CMPN CBSGS

Paper / Subject Code: 36803 / DISTRIBUTED DATABASES May 2019

Q.P. Code: 24228

(3 Hours) [Total Marks 80]

i. Q. 1. is Compulsory.
ii. Attempt any three from the remaining.
iii. Assume suitable data.

Q. 1 (a) What are the characteristics of a Distributed DBMS? (5)

(b) What are the benefits of Data Fragmentation in Distributed Database Design? (5)

(c) Explain Client server distributed database systems. (5)

(d) How is XML useful for data integration? (5)

Q. 2 (a) Describe a simple model for distributed transaction management. (10)

(b) Discuss Transparencies in Distributed Database Design. (10)

Q. 3 (a) Explain the different phases of Three-Phase Commit Protocol. (10)

(b) Illustrate how a distributed database handles query processing. (10)

Q. 4 Consider a train reservation system. Some information to be stored is given below. (assume any extra information required) (20)

1. Train information: train id, start station destination station, total number of seats, number of seats reserved, and price of tickets.
2. Passenger information: passenger-id, name, address, phone number.
3. Reservation information: passenger-id, train id, date of travel, seat number.

Design a distributed database solution for three booking stations across the country.

The Design should include the definition of global schema and fragmentation schema.

Q. 5 (a) What are heterogeneous distributed databases? What are the design issues in such databases? (10)

(b) Give the DTD or XML schema for an xml representation of the following nested-relational schema: (05)

Emp = (ename, ChildrenSet setof(Children), SkillSet setof(Skills))
Children = (name, Birthday) Birthday = (day, month, year)
Skills = (type, ExamsSet setoff(Exams)) Exams = (year, city).

(c) Write a XPath query on the schema of (Q5 b) to list all skill types in Emp. (05)

Q. 6 (a) Write a note on Reference Architecture of Distributed DBMS. (10)

(b) Write a note on Concurrency Control in a Distributed Database System. (10)
