Con. 3523-10.   (REVISED COURSE)   **AN–4222**
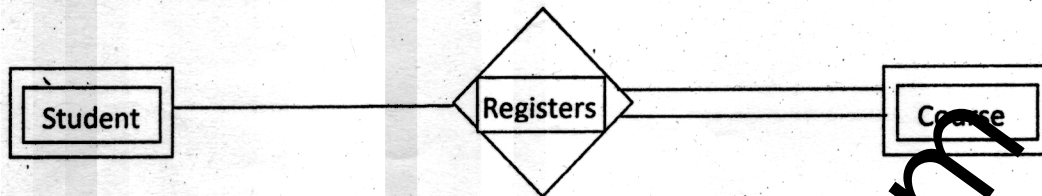
(3 Hours)   [Total Marks : 100]

N.B.:
1. Question No. 1 is Compulsory
2. Attempt any four out of remaining six questions

Q.1 (a) Observe following ERD

Student: ID, Name, Location
Course: CID, Cname, Duration, Fees

1. Create ADT for Course and hence create table for Student.   [06]
2. Solve following queries   [04]
   i. Find all students who have taken ADBMS course
   ii. Find course name and student name who are residing in "Dadar"

(b) For above ERD write XML DTD or XML schema   [06]
Write Path query for the following.   [04]
   i. Find all students who have taken ADBMS course.
   ii. Find course name and student name who are residing in "Dadar"

Q.2 (a) State EER to table mapping rules for different cardinalities, union and all types of generalization/ specialization options.   [10]
(b) Differentiate parallel and distributed databases.   [10]

Q.3 (a) What is the purpose of 2Phase commit protocol? Explain with example.   [10]
(b) Explain different Joins such as EQUIJOIN, NATURAL JOIN, LEFT AND RIGHT OUTER JOIN with suitable examples.   [10]

Q.4 (a) Explain with example nested relation in ORDBMS   [10]
(b) What is meant by cost based Query optimization? List cost functions for SELECT and JOIN query optimization.   [10]

Q.5 (a) How Concurrency Control is achieved in Distributed databases?   [10]
(b) Draw and explain query processing engine in typical DBMS system.   [10]

Q.6 (a) What is data transparency? Explain the type of transparencies distributed database should achieve.   [10]
(b) How queries are processed in distributed databases? Explain with example semi-join technique with its advantages.   [10]

Q.7 Answer any **four** questions :
(a) XML schema elements   [05]
(b) Query processing engine in typical DBMS system.   [05]
(c) Object relational features in SQL3   [05]
(d) EXIST and NOT EXISTS clause in SQL.   [05]
(e) Replication in DDBMS.   [05]