10. Explain briefly:

a) XML - Schema

b) Distributed Query processing

c) Data Integration

d) X-PATH

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Roll No .....

IT - 710

B.E. VII Semester

14

Examination, December 2014

Advance Concepts in Database System

Time : Three Hours

Maximum Marks : 70

Note: Attempt all questions. All questions carry equal marks.

Unit I

1. a) Explain the concept of physical Data Independence and its importance in Data base system. 7

b) Construct a ER-diagram for a Hospital with a set of patient and set of medical Doctor. Associate with each patient a log of the various Test and Examination conducted. 7

OR

2. a) Explain the distinction between condition defined and user defined constraints. Which of these constraints can the system check Automatically. Explain your answer. 7

b) Design a generalization specialization hierarchy for a motor vehicle sales company. Company sales motor cycle, car, van and Buses. Justify your placement of attribute at each level of hierarchy. 7

Unit II

3. a) Why is it not desirable to force users to make an explicit choice of a query processing strategies? 7

   b) Describe how to incrementally maintain the results of union and set difference operations on both insertion and deletion. 7

OR

4. a) List at least four features of the TPC benchmarks that help make them realistic and dependable measures. 7

   b) What is the effect on the cost of merging runs if the number of buffer blocks per run is increased, while keeping overall memory available for buffering runs fixed? 7

Unit III

5. a) Explain the difference between data replication in a distributed system and the maintenance of a remote backup site. 7

   b) Give an example of a join that is not a simple equi-join for which partitioned parallelism can be used. What attributes should be used for partitioning? 7

OR

6. a) Explain concurrency control mechanism in distributed database system with an example. 7

   b) Explain how the database may become inconsistent if some log records pertaining to a block are not output to stable storage before the block is output to disk. 7

Unit IV

7. a) Explain time dimension with the help of suitable example. 7

   b) Suppose you have a spatial database that supports region queries (with circular regions) but not nearest neighbor queries. Describe an algorithm to find the nearest neighbor by making use of multiple region queries. 7

OR

8. a) Discuss the various issues in Real time Database Design. 7

   b) Will Functional dependencies be preserved if a relation is converted to a temporal relation by adding a time attribute? How is the problem handled in a temporal database? 7

Unit V

9. a) Explain the procedure of Accessing databases from web. 7

   b) What are distributed database transaction? How are they performed? 7

OR