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M. Tech 2nd Semester Examination

Distributed Database Management System

MT-203

Time : 3 Hours   Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/ continuation sheet will be issued.

1. Attempt any two parts of the following:

    (a) Explain what is meant by a DBMS and discuss the reasons behind providing such a system.

    (b) What are the main software modules of a DDBMS? Discuss main functions of each of these modules in the context of the client-seven architecture.

    (c) Explain the transparency features of a DDBMS. Define and explain the different types of distribution transparency.   **(2×10=20)**

2. Attempt any two parts of the following:

    (a) Explain the terms : Primary copy locking strategy and Global optimization.

    (b) What are the functions that need to be provided by distributed databases in addition to those of a centralized DBMS?

    (c) What is meant by data allocation in distributed database design? What typical units of data are distributed over sites?   **(2×10=20)**

3. Attempt any two parts of the following:

   (a) What are the strategic objectives for the definition and allocation of fragments?

   (b) Write down the advantages of distributed DDBMS.

   (c) Discuss various types of DDBMS.   **(2×10=20)**

4. Attempt any two parts of the following:

   (a) Explain time stamp based concurrency control algorithms.

   (b) Discuss failures in Distributed DBMS.

   (c) How is a horizontal partitioning of a relation specified? How can a relation be put back together from a complete horizontal partitioning.   **(2×10=20)**

5. Discuss briefly any five parts of the following :

   (a) Data Models.

   (b) Global & Local query optimization.

   (c) Primary Key.

   (d) Entity-Relationship Model.

   (e) Peer-to-peer Distributed Systems.

   (f) Mean time between failure/repair.   **(5×4=20)**