

Distributed database management

Code: MCA E501A

CREDITS: 4

Distributed DBMS features and needs. Reference architecture. Levels of distribution transparency, replication. Distributed database design – fragmentation, allocation criteria.

Storage mechanisms. Translation of global queries. / Global query optimisation. Query execution and access plan. Concurrency control – 2 phases locks. Distributed deadlocks.

Time based and quorum based protocols. Comparison. Reliability- non-blocking commitment protocols.

Partitioned networks. Checkpoints and cold starts. Management of distributed transactions- 2 phase unit protocols. Architectural aspects. Node and link failure recoveries.

Distributed data dictionary management. Distributed database administration.

Heterogeneous databases-federated database, reference architecture, loosely and tightly coupled.

Alternative architecture. Development tasks, Operation- global task management. Client server databases-SQL server, open database connectivity. Constructing an application.