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Syllabus : Reviewing basic concepts of a Relational database, SQL concepts, Overview: Introduction, Query processing in DBMS, Steps of Query Processing, Measures of Query Cost Selection Operation, Sorting, Join Operation, Evaluation of Expressions.

Query Optimization Overview, Goals of Query Optimization, Approaches of Query Optimization, Transformations of Relational Expression, Estimating Statistics of Expression Results Choice of Evaluation Plans.

Syllabus : Advanced Database Access protocols: Discretionary Access Control Based on Granting and Revoking Privileges; Mandatory Access Control and Role-Based Access Control. Overview of Advanced Database models like Mobile databases, Temporal databases, Spatial databases.

Chapter 5 : Database Access Protocol and Advanced Data Models 5-1 to 5-14

Syllabus : Introduction : Distributed Data Processing, What is a Distributed Database System? Design Issues . Distributed DBMS Architecture. Distributed Database Design : Top-Down Design Process, Distribution Design Issues, Fragmentation , Allocation . Overview of Query Processing : Query Processing Problem, Objectives of Query Processing, Complexity of Relational Algebra Operations, Characterization of Query Processors, Layers of Query Processing, Query Optimization in Distributed Databases; Overview of Transaction Management in DDB; Overview of Concurrency Control in DDB; Overview of Recovery in DDB

Chapter 6 : Distributed Databases 6-1 to 6-26

Syllabus : The Need for Data Warehousing; Data Warehouse Defined; Benefits of Data Warehousing ; Features of a Data Warehouse; Data Warehouse Architecture; Data Warehouse and Data Marts; Data Warehousing Design Strategies.

Dimensional Model Vs ER Model; The Star Schema; How Does a Query Execute? The Snowflake Schema; Fact Tables and Dimension Tables; Factless Fact Table; Updates To Dimension Tables, Primary Keys, Surrogate Keys & Foreign Keys; Aggregate Tables; Fact Constellation Schema or Families of Star

Need for Online Analytical Processing; OLTP vs OLAP; OLAP Operations in a cube: Roll-up, Drill-down, Slice, Dice, Pivot ; OLAP Models: MOLAP, ROLAP, HOLAP.

Chapter 7 : Data Warehousing, Dimension Modeling and OLAP 7-1 to 7-36

Syllabus : Challenges in ETL Functions; Data Extraction; Identification of Data Sources; Immediate Data Extraction, Deferred Data Extraction; Data Transformation: Tasks Involved in Data Transformation, Techniques of Data Loading, Loading the Fact Tables and Dimension Tables

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