

**Data Base Systems**

**Unit I**

Introduction: Database-System Applications- Purpose of Database Systems - View of Data - Database Languages - Relational Databases - Database Design -Object-Based and Semi structured Databases - Data Storage and Querying Transaction Management -Data Mining and Analysis - Database Architecture - Database Users and Administrators - History of Database Systems.

**Unit II**

Relational Model: Structure of Relational Databases - Fundamental Relational-Algebra Operations Additional Relational-Algebra Operations- Extended Relational-Algebra Operations - Null Values - Modification of the Database.

**Unit III**

SQL: Data Definition - Basic Structure of SQL Queries - Set Operations -Aggregate Functions - Null Values - Nested Subqueries - Complex Queries - Views -Modification of the Database - Joined Relations - SQL Data Types and Schemas - Integrity Constraints - Authorization - Embedded SQL

**Unit IV**

Relational Languages: The Tuple Relational Calculus - The Domain Relational Calculus - Query-by- Example. Database Design and the E-R Model: Overview of the Design Process - The Entity-Relationship Model - 3 Constraints - Entity-Relationship Diagrams - Entity-Relationship Design Issues - Weak Entity Sets - Database Design for Banking Enterprise

**Unit V**

Relational Database Design: Features of Good Relational Designs - Atomic Domains and First Normal Form - Decomposition Using Functional Dependencies - Functional-Dependency Theory - Decomposition Using Functional Dependencies - Decomposition Using Multivalued Dependencies- More Normal Forms - Database-Design Process

**Text Book:**

1. Database System Concepts, Fifth edition, Abraham Silberschatz, Henry F. Korth, S. Sudarshan, McGraw-Hill-2005.

**Reference Books:**

1. "An introduction to database systems", Bipin C. Desai, Galgotia Publications Pvt Ltd, 1991.
2. "An Introduction to Database Systems", C.J.Date, Third Edition Addison Wesley 1983.