**Database Management Systems**

**UNIT- I**

**Database System Concepts**

Overview of DBMS

Basic DBMS terminology

Database system v/s File system

Advantages and dis-advantages of DBMS

Coded rules

Data independence

**Architecture**

Architecture of a DBMS

Schemas

Instances

Database Languages

Database Administrator

Data Models

**UNIT-II**

**Data Modelling**

**Entity Relationship Model**

ER model concepts

Notation for ER diagram

Mapping constraints

Keys

Super Key

Candidate Key

Primary Key

Generalization

Aggregation

**Relational Model**

Concepts

Constraints

Languages

Relational database design by ER & EER mapping

Relational algebra relational calculus

Relational Algebra

Fundamental operations of Relational Algebra

**UNIT –III**

**Database Design**

Functional dependencies

Loss less decomposition

Normalization

1-NF

2-NF

3-NF

BCNF

**Transaction Management**

**Transactions**

Concepts

ACID Properties

States Of Transaction

Serializability

Isolation

Checkpoints

Deadlock Handling

**Recovery System & Security**

Failure Classifications

Recovery & Atomicity

Log Base Recovery

Recovery with Concurrent Transactions

Introduction to Security & Authorization

**UNIT-IV**

**Introduction to SQL**

Characteristics of SQL

Advantages of SQL

SQL data types and literals

Types of SQL commands

SQL operators and their procedure

Tables

Views and indexes

Queries and sub queries

Aggregate functions

Insert

Update

Delete

Joins

Unions

Intersection

Minus in SQL