

MCS-505

DBMS

Block I

Unit-I

Introduction to DBMS, Database system and application, Purpose of database system, Characteristics and Benefits of a Database, Components of DBMS, Merits and Demerits of DBMS, Database Architecture, Traditional file systems, View of data, Database language languages , Data Dictionary, Types of DBMS: Centralized DBMS, Parallel DBMS, Distributed DBMS, Client-Server DBMS; Relational databases, Database Design, Database Administrator.

Unit-II

Introduction to Data Model, What is Data Model, Need for Data Model, Types of Data Model ER Model

Unit-III

Introduction, What is Relational data model, Relation, Tuple, Attribute, Cardinality, Degree, Domain

Block II

Unit-IV

Introduction to SQL, Characteristic of SQL ,Basic Structure of SQL Queries , Basic Data Types SQL Commands, Useful Relational Operator , Aggregate Functions, SUM function.

Unit-V

Introduction, Compound Conditions and Logical Operators, AND Operator, OR Operator Combining AND and OR Operators ,IN Operator, BETWEEN Operator, NOT Operator Order of Precedence for Logical Operators, LIKE Operator, Concatenation Operator, Alias Column Names, ORDER BY Clause, Handling NULL Values

Unit-VI

Introduction to Normalization, Normalization and Its Objectives, Normal Forms: First Normal Form (1NF),Second Normal Form (2NF),Third Normal Form (3NF), Boyce-Codd Normal Form (BCNF), Fourth Normal Form (4NF), Fifth Normal Form (5NF)

Block-III

Unit-VII

Introduction to keys, Keys, Types of Keys: Super Key, Candidate Key, Primary Key, Alternate Key, Composite Key, Foreign Key.

Unit-VIII

Introduction to database recovery and security, Back up of Database: SQL Server Backup – Scopes and Types, Backup Scopes, Backup Types, Back Up Tools, Types of Database Failure, Types of Database Recovery: Developing a Backup and Recovery Strategy, General Types of Recovery, Structure of Recovery, Recoverable Database Backup Operations, Automated Backup Operations; Database Security.

Unit-IX

Introduction, Model Concept: Basic Terminology, Relational Schema and Instances; Integrity Constraints: Entity Integrity Constraints, Referential Integrity Constraints; Domain Constraints, the CODD Commandments.

Suggested Reading:

1. An introduction to Database Systems, C J Date, Addison-Wesley.
2. Database System Concepts, Abraham Silberschatz, Henry F. Korth & S. Sudarshan, McGraw Hill.
3. Understanding SQL by Martin Gruber, BPB
4. SQL- PL/SQL by Ivan bayross
5. Oracle – The complete reference – TMH /oracle press

