

**B. Sc. (IT) Part I Semester-II**  
**Paper V**  
**Database Management System**

**UNIT- I :**

DBMS : Definition: Databases, DBMS, Problems with traditional file processing system, Objectives of the database systems, Three level architectures of DBMS, Component of DBMS, Database Administrator, Database Users, Data model, Different types of data models, Concepts of Hierarchical, Network Models.

**UNIT-II :**

E-R Models : Basic Concepts, Entity, Attributes, Relation Ship, Mapping, Keys, Weak and Strong Entity Set, Problems on E-R Diagrams, Extended E-R Features: Specialization, Generalization, Aggregation, Problems on Reduction of an E-R Schema to Tables, Tabular representation of Strong, Weak entity Sets and Relationship Sets.

**UNIT-III :**

Relational Model: Structure, Relational Algebra, Fundamental Operations, Set –Intersection, Natural Join, Division and Assignment Operation. Extended Relational Algebra Operations, Aggregate Functions.

**UNIT-IV :**

Functional Dependency: Functional Dependency, Fully Functional Dependency, Partial Dependency, Transitive Dependency, Multi Valued Dependency. Normalization, Normal Forms ( 1NF, 2NF, 3NF, BCNF, 4NF, 5NF). Problems on Normal forms.