

## Third Semester

# BCA- S301: Database Management Systems

### UNIT-I

**Introduction:** Purpose of the data base system, data abstraction, data model, data independence, data definition language, data manipulation language, data base administrator, data base users, overall structure.

**ER Model:** entities, mapping constrains, keys, E-R diagram, reduction E-R diagrams to tables, generation, aggregation, design of an E-R database scheme.

### UNIT-II

**Relational Model:** The catalog, base tables and views. Relational Data Objects - Domains and Relations: Domains, relations, kinds of relations, relations and predicates, relational databases.

**Relational Data Integrity** - Candidate keys and related matters: Candidate keys. Primary and alternate keys. Foreign keys, foreign key rules, nulls. Candidate keys and nulls, foreign key and nulls.

### UNIT-III

**The SQL Language:** Data definition, retrieval and update operations. Table, expressions conditional expressions, embedded SQL.

**Views:** Introduction, what are views for, data definition, data manipulation, SQL support.

### UNIT-IV

**Network model:** basic concepts, data structure diagrams, DBTG CODASYL model, DBTG data retrieval facility, DBTG update facility, DBTG set processing facility, mapping networks to file, networks system.

**Hierarchical model:** basic concepts, tree structure diagrams, data retrieval facility, update facility, virtual records, mapping hierarchical to files, hierarchical system.

### UNIT-V

**File and system structure** : overall system structure, file organization, logical and physical file organization, sequential and random, hierarchical, inverted, nullist, indexing and hashing, B-tree index files.

### Recommended Books

1. Date C.J., Database Systems, Addison Wesley.

**2. Korth, Database Systems Concepts, McGraw Hill.**