Paper Cade: BCADSC 4.4	**Paper Title:** Database Management Systems	**Teaching Hours:** 5 Hrs / Week
Total Teaching Hours: 60Hrs	**Marks:** Th-80+IA-20	**Credits**: 3

UNIT I

Introduction: Database and Database Users, Characteristics of the Database Approach, Actors on the scene, Workers behind the Scene, Advantages of using DBMS, Brief History. Database System Concepts and Architecture: Data Models, Schemas, and Instances, Three Schema Architecture and Data Independence, Database language and interfaces, the database system Environment. **12 Hrs**

UNIT II

Data modeling using the Entity–Relationship(ER) model: High level conceptual data models for database design with an example, Entity types, Entity sets, Attributes and Keys, Relationship types, Relationship sets, Roles and Structural Constraints, Weak Entity Types, ER Diagrams, Naming Conventions and Design Issues. **12 Hrs**

UNIT III

Relational Data Model and Relational Algebra: Relation Data Model and Relational Database Constraints, Relation Algebra, Relational Database Design by ER to Relational Mapping. **12 Hrs**

UNIT IV

Functional dependencies and Normalization for Relational Databases: Informal Design Guidelines for Relational Schemas, Functional Dependencies, Normal Forms based on Primary Keys, General Definition of 2NF and 3NF, Boyce-Codd Normal Form(BCNF). **12 Hrs**

UNIT V

Relational Database Language: Data definition in SQL, Queries in SQL, Insert, Delete and Update Statements in SQL, Views in SQL,PL/SQL: Introduction, Datatypes, The PL/SQL syntax, Logical Comparison in PL/SQL, Understanding PL/SQL block structure- Identifiers, conditional control, iterative control, cursors- Declaring, opening, closing and fetching from a cursor, stored procedures- syntax, creating, calling and deleting a procedure. (Ref.2) **12 Hrs**

Reference Book:

1. RamezElmasri&Shamkant B. Navathe, Fundamentals of Database Systems(Sixth Edition),Pearson Education, 2011
2. Commercial Application Development using Oracle Developer 2000, Ivan Bayross, BPB Publications.
3. Abrahamsi, Silberschataz, Henry. F. Korth, S. Sudarshan, Database System Concepts, Mc. Raw hill.
4. Feuerstein, Oracle PL/SQL Programming, SPD/O'REILLY
5. Oracle Press: ORACLE – Computer reference.
6. C.J. Date, Introduction to database systems, Sixth Edition, Addison Wesley 1995.