

**JYOTI NIVAS COLLEGE AUTONOMOUS
SYLLABUS FOR 2018 BATCH AND THEREAFTER**

Programme: B.C.A

Semester: IV

DATABASE MANAGEMENT SYSTEM

Course Code: 18BCAIVT5

No. of Hours: 60

COURSE OBJECTIVES:

- To understand the evolution of data base system.
- To introduce the basic technical, managerial and methodological organization of data in the database
- Explore the idea of relational database

LEARNING OUTCOMES:

- To learn how to design relational database
- To interact with database efficient.
- To write Oracle queries and create database objects
- To create Oracle PL/SQL applications
- Effective way of design, use and maintain data base.

UNIT - I

13 HRS

Introduction - Definition of a database, applications, file systems versus database systems, view of data, data models, database languages-DDL,DML,TCL,DCL, database administrator, database users, DB System Architecture.

Entity relationship model: basic concepts, constraints, keys, entity relationship diagram, weak entity sets.

Extended E-R features: Specialization, generalization, aggregation.

Relational Model: structure of relational databases, relational algebra.

UNIT - II

13 HRS

Relational Databases

SQL: background, basic structure, set operations, aggregate functions, null values, nested sub queries, views, modification of the database, joined relations, data definition language.

Integrity and Security: domain constraints, referential integrity, assertions, triggers, security and authorization.

Relational Database Design: first normal form, pitfalls in relational database design, functional dependencies, 1NF, 2NF, 3NF, Boyce – Codd normal form, 4NF.

UNIT - III

13 HRS

Data Storage and Querying

Storage and file structure: physical storage media, magnetic disks, storage access, file organization, organization of records in files

Indexing and Hashing: Basic Concepts, Static and Dynamic Hashing

Transaction Management

Transactions: Concept, State, Atomicity and Durability, Concurrent Execution.

Concurrency Control: Lock based protocol, time-stamp based protocol.

Recovery System: failure classification, storage structure, recovery and atomicity, log based recovery, shadow paging.

UNIT - IV

11 HRS

ORACLE :

DDL commands: create, alter, drop, truncate

DML commands: select, insert, update, delete, Group by clause, set operations, joins, subqueries.

Constraints: integrity, referential, entity integrity

Other objects: views, synonyms, indexes

TCL: rollback, savepoint

UNIT - V

10 HRS

PL/SQL

Introduction, architecture, data types, control structures, procedures and functions, triggers

REFERENCES:

1. Abraham Silberschatz, Henry F. Korth, S.Sudarshan. Database System Concepts. Tata McGraw Hill International Editions. 6th edition.
2. Elmasri and Navathe. Database management Systems. Pearson Education Publications.5th Edition
3. George Koch and Kevin Loney. Oracle 8: the Complete reference. Tata McGraw Hill Publications. 10th edition.
4. Robert J Muller. Oracle Developer Handbook. Tata McGraw Hill Publications. 2nd edition.