SARDAR PATEL UNIVERSITY
Vallabh Vidyanagar
Programme & Subject : B.Sc (CA & IT) – M.Sc (CA & IT) Dual Degree
Semester – 3

US03CIIT25 : Relational Database Management Systems-I

(w.e.f June 2020)

Credits   **: 4**   **Exam Duration : 3hrs**

Lectures per week   **: 4**

All units carry equal weightage.

Unit	Description in detail	Weightage(%)
I	**Introduction to DBMS, RDBMS and Data Modeling** - DBMS : Meaning, Advantages, Disadvantage - The three-schema architecture for a Database Management System (DBMS) - Introduction to data models (hierarchical, network, relational) - The relational data model: concepts and terminology, relationships and relationship types - Codd Rules - Difference between DBMS and RDBMS	25%
II	**Introduction to SQL** - SQL - introduction , advantages and disadvantages - Data types – built-in (number, char, varchar2, date, raw, long raw) - Types of SQL Statements : DDL (Data Definition Language), - DML (Data Manipulation Language), DCL (Data Control Language), TCL (Transaction Control Language) - Working with SQL*Plus – overview and basic commands like ed, start, get, save, exit, connect, set linesize, set pagesize and host - Creating table and inserting data - CREATE TABLE, INSERT, retrieving data using query – SELECT , manipulating data – DELETE and UPDATE , modifying and removing table – ALTER TABLE and DROP TABLE.	25%

III	**Data Constraints and Functions** - Pseudo columns – ROWID, ROWNUM, USER, UID, SYSDATE - Null values, TAB table, DUAL table - Operators – arithmetic, relational, logical, range searching, pattern matching and set - Data constraints – Introduction, advantages and disadvantages - Type of data constraints – NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY and CHECK - Modifying constraints, working with data dictionary and - use of USER_CONSTRAINTS - Functions – introduction, merits and demerits, types of functions (scalar and aggregate)	
	- Scalar : Numeric functions (FLOOR, MOD, POWER, ROUND, SQRT and TRUNC), Character functions (CHR, ASCII, CONCAT, INITCAP, LOWER, SUBSTR,TRIM, UPPER), Date functions (ADD_MONTHS, LAST_DAY, NEXT_DAY, MONTHS_BETWEEN), - Conversion functions (TO_NUMBER, TO_CHAR and TO_DATE) - Aggregate fun : AVG, COUNT, MAX, MIN, SUM - Miscellaneous functions – NVL, DECODE, COALESCE	**25%**
IV	**Query, Subquery, Joins, Transaction Management** - Query and subquery, types of subquery - Creation and manipulation of database objects – indexes, views, sequences. - Joining tables – ANSI Style, types of joins (cross join, natural join, equijoin, outer joins, self join) - Data control language statements – GRANT and REVOKE - Transaction control language statements – COMMIT, ROLLBACK and SAVEPOINT	**25%**

Basic Text & Reference Books :
1. An introduction to Database Systems : Bipin C. Desai, Galgotia Poblications Pvt. Ltd.
2. Ivan Bayross : SQL,PL/SQL The programming language of Oracle, 3rd revised edition, BPB Publications
3. SQL/PLSQL for Oracle9i, P. S. Deshpande, dreamtech press, reprint edition 2009
4. Understanding Database Management Systesm : S. Parthsarthy and B.W.Khalkar, First edition – 2007, Master Academy
5. Orale9i The Complete Reference , Kevin Loney, George Koch, Oracle Press