

**SARDAR PATEL UNIVERSITY**  
**Programme: BCA**  
**Semester: III**  
**Syllabus with effect from: June-2012**

<b>Paper Code: US03CBCA01</b>	<b>Total Credit: 4</b>
<b>Title Of Paper: Relational Database Management Systems-I</b>	

<b>Unit</b>	<b>Description in detail</b>	<b>Weighting (%)</b>
<b>I</b>	<b>Introduction to Relational Database Theory and Data Modeling</b> The three-schema architecture for a Database Management System (DBMS) Introduction to data models (hierarchical, network, relational) Examples of current RDBMS products The relational data model: concepts and terminology, operations on data (DDL, DML), relationships and relationship types Integrity constraints Codd rules Entity-relationship modeling (different types of entities, attributes, relationships and their representation in the E-R diagram) Case studies of data modeling using E-R modeling	25%
<b>II</b>	<b>Introduction to SQL</b> 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%
<b>III</b>	<b>Data Constraints And Functions</b> 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 (Abs, Floor, Mod, Power, Round, Sign, 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	<b>Query, Subquery, Joins, Transaction Management and Reporting through SQL*Plus</b> Query and subquery, types of subquery Creation and manipulation of database objects – indexes, views, sequences and synonym Joining tables, types of joins (cross join, natural join, inner join, equijoin, outer joins, self join. Data control language statements – GRANT and REVOKE Transaction control language statements – COMMIT, ROLLBACK and SAVEPOINT Overview of SQL*Plus report Building a simple report Reporting commands – remark, setheadsep, ttitle, btitle, column, breakon, compute, spool, set pause.	25%
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#### **Basic Text & Reference Books :-**

- An introduction to Database Systems : Bipin C. Desai, Galgotia Publications Pvt. Ltd.
- Ivan Bayross : SQL,PL/SQL The programming language of Oracle, 3rd revised edition, BPB Publications
- Kevin Loney, George Koch, Oracle9i The Complete Reference , Oracle Press

#### **Books for Additional Reading:**

- Understanding Database Management Systems : S. Parthsarthy and B.W.Khalkar, First edition – 2007, Master Academy
- P. S. Deshpande : SQL/PLSQL for Oracle9i, dreamtech press, reprint edition 2009

