Course 205: Concepts of Relational Database Management System

Course Code	205
Course Title	Concepts of Relational Database Management System
Credit	4
Nature of Subject:	Theory and Practical
Teaching Per Week	4 Hrs
Minimum Weeks per Semester	15 (Including Class work, examination, preparation etc.)
Review/Revision	June 2020
Purpose of Course	Imparting fundamental knowledge of Relational Database. This course also includes SQL & fundamentals of PL/SQL.
Course Objective	1. To make students understand RDBMS architecture 2. Have edge over Control and Iterative statements of PL/SQL 3. Understanding advanced SQL and various complex queries. 4. To make students aware of cursors and Exception Handling.
Pre-requisite	Basic knowledge of Database Management System (DBMS) .
Course Out come	After learning this subject students will know how to store, retrieve and administer the data easily & efficiently.
Course Content	**Unit-1. Introduction of Relational model** 1.1 Codd's Rules 1.2 Relational operations Algebra (select, project, union, intersection, rename) 1.3 Transaction control language: commit, savepoint, rollback 1.4 Data Control language: Grant, Revoke **Unit-2 Advanced SQL** 2.1 Data types (NUMBER, CHAR, VARCHAR, VARCHAR2, CLOB, NCLOB, LONG, DATE, RAW, LONGROW) 2.2 ROWID pseudo column & DUAL table 2.3 DATE Functions (SYSDATE, SYSTIMESTAMP, TO_CHAR, TRUNC, ROUND, NEXT_DAY, LAST_DAY, MONTHS_BETWEEN, ADD_MONTHS) 2.4 Concepts of Index (Create, drop) 2.5 Join Queries 2.5.1 Inner Join 2.5.2 Outer Join (Left, Right, Full) 2.5.3 Cross Join 2.6 Sub Queries with(Insert, update and Delete) 2.7 Nested queries **Unit-3: PL/SQL and conditional Statements :** 3.1 Introduction to PL/SQL (Definition & Block Structure) 3.2 Variables, Constants and Data Type 3.3 Assigning Values to Variables 3.4 User Defined Record 3.5 Conditional Statements 3.5.1 IF…THEN statement 3.5.2 IF..Else statements 3.5.3 multiple conditions 3.5.4 Nested IF statements 3.5.5 CASE statements **Unit-4 : Iterative Statements :** 4.1 Iterative statements : 4.1.1 Loop..End Loop 4.1.2 For.. Loop 4.1.3 While Loop 4.1.4 EXIT Loop 4.1.5 Continue

	Unit-5: Cursors and Exception Handling: 5.1 Concepts of Cursors 5.1.1 Types of cursors (Implicit & Explicit) 5.1.2 Declare, open, fetch and close cursors. 5.2 Cursor Attributes : (%FOUND,%NOTFOUND,%ISOPEN,%ROWCOUNT) 5.3 Exception Handling in PL/SQL 5.3.1 Types of Exceptions: 5.3.1.1 Named System Exceptions 5.3.1.2 Unnamed System Exceptions 5.3.1.3 User-defined Exceptions 5.3.1.4 User Defined Exceptions 5.3.2 Exception Handling
Reference Book	1. The Complete Reference, George Koch, Kevin Loney – Oracle Press 2. Database Management System, Oracle, SQL and PL/SQL, 2nd ed., Das Gupta & Radha Krishna, PHI 3. Oracle 9 PL/SQL Programming, Scott Urman – Oracle Press 4. Oracle SQL: The Essential Reference, David C. Kreines – O'Reilly 5. SQL, PL/SQL:The Programming Language Of Oracle, Ivan Bayross – BPB 6. Oracle PL/SQL Programming – Feuerstein & Peribyl – SPD O'Reilly 7. Learning Oracle SQL and PL/SQL: A Simplified Guide, Rajeeb C. Chatterjee
Teaching Methodology	Class Work, Discussion, Self Study, Seminars and/or Assignments
Evaluation Method	30% Internal assessment. 70% External assessment.