

**SARDAR PATEL UNIVERSITY**  
**Vallabh Vidyanagar**  
**Programme & Subject : B.Sc (CA & IT) – M.Sc (CA & IT) Dual Degree**  
**Semester – 4**  
**US04CIIT25 : Relational Database Management Systems - II**  
**(w.e.f June 2020)**

**Credits : 4**

**Exam Duration : 3hrs**

**Lectures per week : 4**

**All units carry equal weightage.**

<b>Unit</b>	<b>Description in detail</b>	<b>Weightage</b>
<b>I</b>	<p><b>Relational Database Design</b></p> <ul style="list-style-type: none"> <li>- Entity-relationship modeling (different types of entities, attributes, relationships and their representation in the E-R diagram)</li> <li>- Case studies of data modeling using E-R modeling</li> <li>- Consequences of poor Data base Design</li> <li>- Normalization, 1<sup>st</sup> Normal Form, 2<sup>nd</sup> Normal Form, 3<sup>rd</sup> Normal Form, Boyce-Codd Normal Form</li> <li>- Examples of normalization</li> </ul>	25%
<b>II</b>	<p><b>Basics of PL/SQL</b></p> <ul style="list-style-type: none"> <li>- PL/SQL - Introduction and advantages</li> <li>- Understanding PL/SQL Block structure</li> <li>- Fundamentals of PL/SQL Language - data types (BOOLEAN, CHAR, NUMBER, DATE, VARCHAR2), variables, constants and expressions (CASE expression)</li> <li>- Operators</li> <li>- Conditional statement – IF and CASE statements</li> <li>- Controlling loop iterations – LOOP, EXIT, EXITWHEN, WHILE, FOR</li> <li>- Sequential control statement – GOTO and NULL</li> </ul>	25%

III	<b>Cursors and Exception Handling</b> <ul style="list-style-type: none"> <li>- SELECT..INTO statement</li> <li>- Working with cursor : introduction, types, attributes and processing (i.e. declaring, opening, fetching and closing), using parameterized cursor, using cursor FOR loop</li> <li>- Error Handling : introduction, advantages of exceptions, types of exceptions</li> <li>- Working with user-defined exceptions – declaration, RAISE_APPLICATION_ERROR, Pragma, EXCEPTION_INIT, SQLCODE and SQLERRM</li> </ul>	25%
IV	<b>Stored Subprograms, Database Triggers and Packages</b> <ul style="list-style-type: none"> <li>- Stored procedures – introduction, creating, modifying, executing and dropping procedures</li> <li>- Stored functions – introduction, creating, modifying, executing and dropping functions</li> <li>- Database triggers – introduction, creating, modifying and dropping triggers, types of triggers</li> <li>- Packages – meaning, advantages, creating, modifying and dropping</li> </ul>	25 %

**Basic Text & Reference Books :**

1. Ivan Bayross : SQL, PL/SQL The programming language of Oracle, 3<sup>rd</sup> revised edition, BPB Publications
2. Database Management Systems ,Raghu Ramkrishnan & Johannes, Mc Graw Hill, 3<sup>rd</sup> Edition
3. SQL/PLSQL for Oracle9i, P. S. Deshpande, dreamtech press, reprint edition 2009
4. Understanding Database Management System : S. Parthasarthy and B.W.Khalkar, First edition – 2007, Master Academy
5. Oracle9i PL/SQL : A developer’s guide, Buluksu Lakshman, A press, edition 2003