ATTENDANCE SHEET

Student Code	Name of the Student ➔	1	2	3	4
	Introduction to RDBMS **Total Duration: 8 Hours** **Each Session= 2 Hours**	**Session 1** • Introduction to Database Management Systems (DBMS) • Database Management System: Definitions • DBMS • Benefits of database approach • DBMS functions • Database System • Data Model • Database Architecture • An Example of the Three Levels • Schema • Data Independence • Types Of Database Models • Database Design Phases • Introduction to RDBMS • Definition: RDBMS • Features Of an RDBMS • Some Important Terms • Properties of Relations • Keys • Referential Integrity	**Session 2** • Database Design • E-R Modeling • Example E-R Diagrams	**Session 3** • Normalization and Normal Forms • Why Normal Forms • The Evils Of Redundancy • Refining an ER Diagram • First Normal Form • Functional Dependencies • Second Normal Form	**Session 4** • Normalization and Normal Forms (Contd…) • Transitive Dependency • Third Normal Form • Boyce Codd Normal Form (BCNF) • Decomposition of a Relation Scheme • Loss less Join Decompositions

ATTENDANCE SHEET

Student Code	Name of the Student ➔	1	2	3	4	5	6	7	8	9
	Oracle Database 11g:Introduction to SQL 2.0 **Total Duration: 40 Hours** **Each Session= 2 Hours**	**Session 1** **Introduction** Introduction to DBMS and RDBMS Database design and Normalization, Relationship, E-R Diagram, SDLC (Explain Exam objectives, over view of DBA and developer track, exam numbers, discount vouchers etc)	**Session 2** **Retrieving Data Using the SQL SELECT Statement** List the capabilities of SQL SELECT statements Execute a basic SELECT statement Identify and use the key features of Oracle SQL Developer	**Session 3** **Restricting and Sorting Data** Limit the rows that are retrieved by a query Sort the rows that are retrieved by a query Use ampersand substitution to restrict and sort output at run time	**Session 4** **Using Single-Row Functions to Customize Output** Describe various types of functions that are available in SQL Use character, number, and date functions in SELECT statements Describe the use of conversion functions	**Session 5** **Reporting Aggregated Data Using the Group Functions** Identify the available group functions Describe the use of group functions Group data by using the GROUP BY clause Include or exclude grouped rows by using the HAVING clause Use the ROLLUP operation to produce subtotal values Use the CUBE operation to produce cross-tabulation values Use the GROUPING function to identify the row values created by ROLLUP or CUBE Use GROUPING SETS to produce a single result set	**Session 6** **Displaying Data from Multiple Tables** Write SELECT statements to access data from more than one table using equijoins and nonequijoins Join a table to itself by using a self-join View data that generally does not meet a join condition by using outer joins Generate a Cartesian product of all rows from two or more tables	**Session 7** **Using Subqueries to Solve Queries** Define subqueries Describe the types of problems that subqueries can solve List the types of subqueries Write single-row and multiple-row subqueries	**Session 8** **Using the Set Operators** Describe set operators Use a set operator to combine multiple queries into a single query Control the order of rows returned	**Session 9** **Manipulating Data and Transaction Control** Describe each data manipulation language (DML) statement Insert rows into a table Update rows in a table Delete rows from a table Control transactions

ATTENDANCE SHEET

Student Code	Name of the Student ➔	10	11	12	13	14	15	16
		Session 10 **Using DDL Statements to Create and Manage Tables** Categorize the main database objects Review the table structure List the data types that are available for columns Create a simple table Explain how constraints are created at the time of table creation Describe how schema objects work	**Session 11** **Creating Other Schema Objects** Create simple and complex views Retrieve data from views Create, maintain, and use sequences Create and maintain indexes Create private and public synonyms	**Session 12** **Managing Objects with Data Dictionary Views** Use the data dictionary views to research data on your objects Query various data dictionary views	**Session 13** **Controlling User Access** Differentiate system privileges from object privileges Grant privileges on tables View privileges in the data dictionary Grant roles Distinguish between privileges and roles	**Session 14** **Managing Schema Objects** Add constraints Create indexes Create indexes using the CREATE TABLE statement Creating function-based indexes Drop columns and set column UNUSED Perform FLASHBACK operations Create and use external tables	**Session 15** **Hierarchical Retrieval** Interpret the concept of a hierarchical query Create a tree-structured report Format hierarchical data Exclude branches from the tree structure	**Session 16** **Manipulating Large Data Sets** Manipulate data using subqueries Describe the features of multitable INSERTs Use the following types of multitable INSERTs Unconditional INSERT Pivoting INSERT Conditional ALL INSERT Conditional FIRST INSERT Merge rows in a table Track the changes to data over a period of time

ATTENDANCE SHEET

Student Code	Name of the Student ➔	17	18	19	20
		Session 17 **Managing Data in Different Time Zones** TZ_OFFSET FROM_TZ TO_TIMESTAMP TO_TIMESTAMP_TZ TO_YMINTERVAL TO_DSINTERVAL CURRENT_DATE CURRENT_TIMESTAMP LOCALTIMESTAMP DBTIMEZONE SESSIONTIMEZONE EXTRACT	**Session 18** **Retrieving Data Using Subqueries** Write a multiple-column subquery Use scalar subqueries in SQL Solve problems with correlated subqueries Update and delete rows using correlated subqueries Use the EXISTS and NOT EXISTS operators Use the WITH clause	**Session 19** **Regular Expression Support** Regular expression support in SQL to search, match, and replace strings in terms of regular expressions.	**Session 20** Practice /Doubt Solving/Modular Exam

ATTENDANCE SHEET

Student Code	Name of the Student ➔	1	2	3	4	5	6
	Oracle Database 11g:Program with PL/SQL 2.0 **Total Duration: 40 Hours** **Each Session= 2 Hours**	**Session 1** **Introduction to PL/SQL** Describe the objectives of the course Identify the database tables used in the course Identify the Oracle products that help you design a complete business solution Explain the need for PL/SQL Explain the benefits of PL/SQL Identify the different types of PL/SQL blocks Use iSQL*Plus as a development environment for PL/SQL Output messages in PL/SQL	**Session 2** **Declaring PL/SQL Variables, Writing Executable Statements** Identify valid and invalid identifiers List the uses of variables Declare and initialize variables List and describe various data types Identify the benefits of using the %TYPE attribute Declare, use, and print bind variables Identify lexical units in a PL/SQL block Use built-in SQL functions in PL/SQL Describe when implicit conversions take place and when explicit conversions have to be dealt with Write nested blocks and qualify variables with labels Write readable code with appropriate indentations	**Session 3** **Interacting with the Oracle Server, Writing Control Structures** Determine which SQL statements can be directly included in a PL/SQL executable block Manipulate data with DML statements in PL/SQL Use transaction control statements in PL/SQL Make use of the INTO clause to hold the values returned by a SQL statement Differentiate between implicit cursors and explicit cursors Use SQL cursor attributes Identify the uses and types of control structures Construct an IF statement Use CASE statements and CASE expressions Construct and identify different loop statements Use guidelines when using conditional control structures	**Session 4** **Working with Composite Data Types** Create user-defined PL/SQL records Create a record with the %ROWTYPE attribute Create an INDEX BY table Create an INDEX BY table of records Describe the differences among records, tables, and tables of records	**Session 5** **Using Explicit Cursors** Distinguish between implicit and explicit cursors Discuss the reasons for using explicit cursors Declare and control explicit cursors Use simple loops and cursor FOR loops to fetch data Declare and use cursors with parameters Lock rows with the FOR UPDATE clause Reference the current row with the WHERE CURRENT clause	**Session 6** **Handling Exceptions** Define PL/SQL exceptions Recognize unhandled exceptions List and use different types of PL/SQL exception handlers Trap unanticipated errors Describe the effect of exception propagation in nested blocks Customize PL/SQL exception messages

ATTENDANCE SHEET

Student Code	Name of the Student ➔	7	8	9	10	11	12	13
		Session 7 Creating simple Stored Procedures and Functions Differentiate between anonymous blocks and subprograms Create a simple procedure and invoke it from an anonymous block Create a simple function Create a simple function that accepts a parameter Differentiate between procedures and functions	**Session 8** Creating Stored Procedures Describe and create a procedure Create procedures with parameters Differentiate between formal and actual parameters Use different parameter-passing modes Invoke a procedure Handle exceptions in procedures Remove a procedure	**Session 9** **Stored Functions and Debugging Subprograms** Describe the uses of functions Create stored functions Invoke a function Remove a function Differentiate between a procedure and a function	**Session 10** **Creating Packages** Describe packages and list their components Create a package to group together related variables, cursors, constants, exceptions, procedures, and functions Designate a package construct as either public or private Invoke a package construct Describe the use of a bodiless package	**Session 11** **Using More Package Concepts** Overload package procedures and functions Use forward declarations Create an initialization block in a package body Manage persistent package data states for the life of a session Use PL/SQL tables and records in packages Wrap source code stored in the data dictionary so that it is not readable	**Session 12** **Using Oracle-Supplied Packages in Application Development** Describe how the DBMS_OUTPUT package works Use UTL_FILE to direct output to operating system files Use the HTP package to generate a simple Web page Describe the main features of UTL_MAIL Call the DBMS_SCHEDULER package to schedule PL/SQL code for execution	**Session 13** **Dynamic SQL and Metadata** Describe the execution flow of SQL statements Build and execute SQL statements dynamically using Native Dynamic SQL (that is, with EXECUTE IMMEDIATE statements) Compare Native Dynamic SQL with the DBMS_SQL package approach Use the DBMS_METADATA package to obtain metadata from the data dictionary as XML or creation DDL that can be used to re-create the objects

ATTENDANCE SHEET

Student Code	Name of the Student ➔	14	15	16	17	18	19	20
		Session 14 **Design Considerations for PL/SQL Code** Use package specifications to create standard constants and exceptions Write and call local subprograms Set the AUTHID directive to control the run-time privileges of a subprogram Execute subprograms to perform autonomous transactions Use bulk binding and the RETURNING clause with DML Pass parameters by reference using a NOCOPY hint Use the PARALLEL ENABLE hint for optimization	**Session 15** **Managing Dependencies** Track procedural dependencies Predict the effect of changing a database object on stored procedures and functions Manage procedural dependencies	**Session 16** **Manipulating Large Objects** Compare and contrast LONG and LOB (large object) data types Create and maintain LOB data types Differentiate between internal and external LOBs Use the DBMS_LOB PL/SQL package Describe the use of temporary LOBs	**Session 17** **Creating Triggers** Describe the different types of triggers Describe database triggers and their uses Create database triggers Describe database trigger-firing rules Remove database triggers	**Session 18** **Creating Database Triggers(Introduce remaining triggers)** Create additional database triggers Explain the rules governing triggers Implement triggers	**Session 19** **Understanding and Influencing the PL/SQL Compiler** Describe native and interpreted compilations List the features of native compilation Switch between native and interpreted compilations Set parameters that influence PL/SQL compilation Query data dictionary views on how PL/SQL code is compiled Use the compiler warning mechanism and the DBMS_WARNING package to implement compiler warnings	**Session 20** **Practice / Doubt Solving/Modular Exam**

ATTENDANCE SHEET

Student Code	Name of the Student ➔	1	2	3	4	5	6	7	8
	Oracle Database 11g:Administration Workshop I **Total Duration: 40 Hours** **Each Session= 2 Hours**	**Session 1** **Exploring the Oracle Database Architecture** Oracle Database Architecture Overview Oracle ASM Architecture Overview Process Architecture Memory structrues Logical and physical storage structures ASM storage components	**Session 2** **Installing Oracle Software** Tasks of an Oracle Database Administrator Tools Used to Administer an Oracle Database Installation: System Requirements Oracle Universal Installer (OUI)	**Session 3** **Installing Oracle Software (Contd...)** Installing Oracle Grid Infrastructure Installing Oracle Database Software Silent Install	**Session 4** **Creating an Oracle Database** Create a database by using the Database Configuration Assistant (DBCA) Generate database creation scripts with the DBCA Manage database design templates with the DBCA Perform additional tasks with the DBCA Create Database manually	**Session 5** **Managing the Oracle Database Instance** Start and stop the Oracle database and components Use Oracle Enterprise Manager Access a database with SQL*Plus Modify database initialization parameters Describe the stages of database startup Describe database shutdown options View the alert log Access dynamic performance views	**Session 6** **Manage the ASM Instance** Describe the benefits of using ASM Manage the ASM instance Create and drop ASM disk groups	**Session 7** **Manage the ASM Instance (Contd...)** Extend ASM disk groups Retrieve ASM metadata by using various utilities	**Session 8** **Configuring the Oracle Network Environment** Use Enterprise Manager to: Create additional listeners Create Oracle Net Service aliases Configure connect-time failover Control the Oracle Net Listener Use tnsping to test Oracle Net connectivity Identify when to use shared servers and when to use dedicated servers

ATTENDANCE SHEET

Student Code	Name of the Student ➔	9	10	11	12	13	14	15
		Session 9 **Managing Database Storage Structures** Storage Structures How Table Data Is Stored Anatomy of a Database Block Space Management in Tablespaces Tablespaces in the Preconfigured Database Actions with Tablespaces Oracle Managed Files (OMF)	**Session 10** **Administering User Security** Create and manage database user accounts: Authenticate users Assign default storage areas (tablespaces) Grant and revoke privileges Create and manage roles Create and manage profiles: Implement standard password security features Control resource usage by users	**Session 11** **Managing Data Concurrency** Data Concurrency Enqueue Mechanism Resolving Lock Conflicts Deadlocks	**Session 12** Managing Undo Data Explain DML and undo data generation Monitor and administer undo data Describe the difference between undo data and redo data Configure undo retention Guarantee undo retention Use the Undo Advisor	**Session 13** Implementing Oracle Database Auditing Describe DBA responsibilities for security Enable standard database auditing Specify audit options Review audit information Maintain the audit trail	**Session 14** **Database Maintenance** Manage optimizer statistics Manage the Automatic Workload Repository (AWR) Use the Automatic Database Diagnostic Monitor (ADDM) Describe and use the advisory framework Set alert thresholds Use server-generated alerts Use automated tasks	**Session 15** **Performance Management** Performance Monitoring Managing Memory Components Enabling Automatic Memory Management (AMM) Automatic Shared Memory Advisor Using Memory Advisors Dynamic Performance Statistics Troubleshooting and Tuning Views Invalid and Unusable Objects

ATTENDANCE SHEET

Student Code	Name of the Student ➔	16	17	18	19	20
		Session 16 **Backup and Recovery Concepts** Part of Your Job Statement Failure User Error Understanding Instance Recovery Phases of Instance Recovery Using the MTTR Advisor Media Failure Archive Log Files	**Session 17** Performing Database Backups Backup Solutions: Overview Oracle Secure Backup User-Managed Backup Terminology Recovery Manager (RMAN) Configuring Backup Settings Backing Up the Control File to a Trace File Monitoring the Flash Recovery Area	**Session 18** **Performing Database Recovery** Opening a Database Data Recovery Advisor Loss of a Control File Loss of a Redo Log File Data Recovery Advisor Data Failures Listing Data Failures Data Recovery Advisor Views	**Session 19** **Moving Data** Describe ways to move data Create and use directory objects Use SQL*Loader to move data Use external tables to move data General architecture of Oracle Data Pump Use Data Pump export and import to move data	**Session 20** **Working with Support** Use the Enterprise Manager Support Workbench Work with Oracle Support Log service requests (SR) Manage patches

ATTENDANCE SHEET

Student Code	Name of the Student ➔	1	2	3	4	5	6	7
	Oracle Database 11g:Administration Workshop II **Total Duration: 40 Hours** **Each Session= 2 Hours**	**Session 1** **Core Concepts and Tools of the Oracle Database** The Oracle Database Architecture: Overview ASM Storage Concepts Connecting to the Database and the ASM Instance DBA Tools Overview	**Session 2** **Configuring for Recoverability** Purpose of Backup and Recovery (B&R), Typical Tasks and Terminology Using the Recovery Manager (RMAN) Configuring your Database for B&R Operations Configuring Archivelog Mode Configuring Backup Retention Configuring and Using a Flash Recovery Area (FRA)	**Session 3** **Using the RMAN Recovery Catalog** Tracking and Storing Backup Information Setting up a Recovery Catalog Recording Backups Using RMAN Stored Scripts Managing the Recovery Catalog (Backup, Export, Import, Upgrade, Drop and Virtual Private Catalog)	**Session 4** **Configuring Backup Settings** Configuring and Managing Persistent Settings for RMAN Configuring Autobackup of Control File Backup optimization Advanced Configuration Settings: Compressing Backups Configuring Backup and Restore for Very Large Files (Multisection)	**Session 5** **Creating Backups with RMAN** RMAN backup types Creating and Using the following Backup Sets and Image Copies - Whole Database Backup - Fast Incremental Backup - Configure Backup Destinations - Duplexed Backup Sets - Archival Backups	**Session 6** **Restore and Recovery Task** Restoring and Recovering Causes of File Loss Automatic Tempfile Recovery Recovering from the Loss of a Redo Log Group Recovering from a Lost Index Tablespace Re-creating a Password Authentication File Complete and Incomplete Recovery Other Recovery Operations	**Session 7** **Using RMAN to Perform Recovery** Complete Recovery after Loss of a Critical or Noncritical Data File Recovering Image Copies and Switching Files Restore and Recovery of a Database in NOARCHIVELOG Mode Incomplete Recovery Performing Recovery with a Backup Control File Restoring from Autobackup; Server Parameter File and Control File Restoring and Recovering the Database on a New Host

ATTENDANCE SHEET

Student Code	Name of the Student ➔	8	9	10	11	12	13	14
		Session 8 **Monitoring and Tuning RMAN** Monitoring RMAN Jobs Balance Between Speed of Backup Versus Speed of Recovery RMAN Multiplexing Synchronous and Asynchronous I/O Explaining Performance Impact of MAXPIECESIZE, FILESPERSET, MAXOPENFILES and BACKUP DURATIO	**Session 9** **Diagnosing the Database** Data Recovery Advisor (DRA) Block Corruption Automatic Diagnostic Repository (ADR) Health Monitor The ADR Command-Line Tool, ADRC	**Session 10** **Using Flashback Technology I** Flashback Technology: Overview and Setup Using Flashback Technology to Query Data Flashback Table Flashback Transaction Query Performing Flashback Transaction Backout	**Session 11** **Using Flashback Technology II** Describe and use Oracle Total Recall Creating and enabling a Flashback Data Archive (FDA) Managing FDAs Viewing metadata Describe and use flashback recycle bins Restore dropped tables from the recycle bin Manage space usage in the recycle bin Query the recycle bin Restore dropped tables from the recycle bin Manage space usage in the recycle bin Query the recycle bin	**Session 12** **Performing Flashback Database** Configuring Flashback Database Performing Flashback Database Operations Monitoring Flashback Database	**Session 13** **Managing Memory** Oracle Memory Structures Oracle Database Memory Parameters Using Automatic Memory Management Automatic Shared Memory Management Using Memory Advisors Using Data Dictionary Views	**Session 14** **Managing Database Performance** Tuning Activities Using Statistic Preferences Optimizer Statistics Collection Monitor the Performance of Sessions and Services Automatic Workload Repository (AWR) Describing the Benefits of Database Replay

ATTENDANCE SHEET

Student Code	Name of the Student ➔	15	16	17	18	19	20
		Session 15 **Managing Performance by SQL Tuning** SQL Tuning and SQL Advisors Using SQL Tuning Advisor SQL Access Advisor SQL Performance Analyzer Overview	**Session 16** **Managing Resources** Database Resource Manager: Overview and Concepts Accessing and Creating Resource Plans Creating Consumer Group Specifying Resource Plan Directives, including: - Limiting CPU Utilization at the Database Level - Instance Caging Activating a Resource Plan Monitoring the Resource Manager	**Session 17** **Automating Tasks with the Scheduler** Simplifying Management Tasks Creating a Job, Program, and Schedule Using Time-Based, Event-Based, and Complex Schedules Describing the Use of Windows, Window Groups, Job Classes, and Consumer Groups Multi-Destination Jobs	**Session 18** **Managing Space in Blocks** Free Space Management Monitoring Space Compressing Data	**Session 19** **Managing Space for the Database** Using 4 KB-Sector Disks Transporting Tablespaces Transporting Databases	**Session 20** **Duplicating a Database** Purpose and Methods of Cloning a Database Using RMAN to Create a Duplicate Database Cloning a Database from a Backup Duplicate a Database Based on a Running Instance Targetless Duplicating a Database