

## Exam 1Z0-061

### Oracle Database 19c: SQL Fundamentals

#### Description

The SQL Fundamentals exam is intended to verify that certification candidates have a basic understanding of the SQL language. It covers the aspects of the language that are likely to be useful to many developers and DBAs on a regular basis.

#### Courses:

- Introduction
- Retrieving Data Using the SQL SELECT Statement
- Restricting and Sorting Data
- Using Single-Row Functions to Customize Output
- Using Conversion Functions and Conditional Expressions
- Reporting Aggregated Data Using the Group Functions
- Displaying Data from Multiple Tables
- Using Subqueries to Solve Queries
- Using the Set Operators
- Manipulating Data
- Using DDL Statements to Create and Manage Tables

## Exam 1Z0-062

### Oracle Database 19c: Installation and Administration (OCA)

#### Oracle Database Administration

##### Courses:

##### Exploring the Oracle Database Architecture

- List the architectural components of Oracle Database
- Explain the memory structures
- Describe the background processes
- Explain the relationship between logical and physical storage structures

##### Oracle Database Management Tools

- Use database management tools

##### Oracle Database Instance

- Understand initialization parameter files
- Start up and shut down an Oracle database instance
- View the alert log and access dynamic performance views

##### Configuring the Oracle Network Environment

- Configure Oracle Net Services
- Use tools for configuring and managing the Oracle network
- Configure client-side network
- Configure communication between databases

##### Managing Database Storage Structures

- Describe the storage of table row data in blocks
- Create and manage tablespaces

##### Administering User Security

- Create and manage database user accounts
- Grant and revoke privileges
- Create and manage roles
- Create and manage profiles

### Managing Space

- Explain how Oracle database server automatically manages space
- Save space by using compression
- Proactively monitor and manage tablespace space usage
- Use the Segment Advisor
- Reclaim wasted space from tables and indexes by using the segment shrink functionality
- Manage resumable space allocation

### 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

### Managing Data Concurrency

- Describe the locking mechanism and how Oracle manages data concurrency
- Monitor and resolve locking conflicts

### Implementing Oracle Database Auditing

- Explain DBA responsibilities for security and auditing
- Enable standard database auditing and unified auditing

### Backup and Recovery Concepts

- Identify the importance of checkpoints, redo log files, and archive log files

### Backup and Recovery Configuration

- Configure the fast recovery area
- Configure ARCHIVELOG mode

### Performing Database Backups

- Create consistent database backups
- Back up your database without shutting it down
- Create incremental backups
- Automate database backups
- Manage backups

### Performing Database Recovery

- Determine the need for performing recovery
- Use Recovery Manager (RMAN) and the Data Recovery Advisor to perform recovery of the control file, redo log file and data file

### Moving Data

- Describe ways to move data
- Use SQL\*Loader to load data from a non-Oracle database
- Use external tables to move data via platform-independent files
- Explain the general architecture of Oracle Data Pump
- Use Data Pump Export and Import to move data between Oracle databases

### Performing Database Maintenance

- Manage the Automatic Workload Repository (AWR)
- Use the Automatic Database Diagnostic Monitor (ADDM)
- Describe and use the advisory framework
- Set alert thresholds
- User server-generated alerts
- Use automated tasks

### Managing Performance

- Use Automatic Memory Management
- Use the Memory Advisor to size memory buffers

### Managing Performance: SQL Tuning

- Manage optimizer statistics
- Use the SQL Tuning advisor
- Use the SQL Access Advisor to tune a workload

### Managing Resources Using Database Resource Manager

- Configure the Database Resource Manager
- Access and create resource plans
- Monitor the Resource Manager

### Automating Tasks by Using Oracle Scheduler

- Use Oracle Scheduler to simplify management tasks
- Use job chains to perform a series of related tasks
- Use Scheduler jobs on remote systems
- Use advanced Scheduler features to prioritize jobs

## Installing, Upgrading and Patching the Oracle Database

### Oracle Software Installation Basics

- Plan for an Oracle Database software installation

### Installing Oracle Grid Infrastructure for a Standalone Server

- Configure storage for Oracle Automatic Storage Management (ASM)
- Install Oracle Grid Infrastructure for a standalone server

### Installing Oracle Database Software

- Install the Oracle Database software

### Creating an Oracle Database Using DBCA

- Create a database by using the Database Configuration Assistant (DBCA)
- Generate database creation scripts by using DBCA
- Manage database design templates by using DBCA
- Configure database options by using DBCA

### Using Oracle Restart

- Use Oracle Restart to manage components

### Upgrading Oracle Database Software

- Describe upgrade methods
- Describe data migration methods
- Describe the upgrade process

### Preparing to Upgrade to Oracle Database 19c

- Describe upgrade requirements when certain features or options are used in Oracle Database
- Use the pre-upgrade information tool before performing an upgrade
- Prepare the new Oracle home prior to performing an upgrade

### Upgrading to Oracle Database 19c

- Upgrade the database to Oracle Database 19c by using the Database Upgrade Assistant (DBUA)
- Perform a manual upgrade to Oracle Database 19c by using scripts and tools

### Performing Post-Upgrade Tasks

- Migrate to unified auditing
- Perform post-upgrade tasks

### Migrating Data by Using Oracle Data Pump

- Migrate data by using Oracle Data Pump

## Exam 1Z0-063

### Oracle Database 19c: Advanced Administration

#### This exam measures the following skills\*:

- Configuring and managing Oracle Recovery Manager (RMAN) settings
- Using the Oracle RMAN recovery catalog
- Performing backup and recovery
- Diagnosing database failures and using the automatic diagnostic repository
- Encrypting, securing, monitoring, and tuning Oracle RMAN backups
- Configuring and using flashback features
- Transporting and copying tablespaces and databases
- Creating and managing multi-tenant container databases and pluggable databases

### Backup and Recovery

#### Courses:

##### Oracle Data Protection Solutions

- Explain Oracle backup and recovery solutions
- Describe types of database failures
- Describe the tools available for backup and recovery tasks
- Describe RMAN and maximum availability architecture
- Use the SYSBACK privilege
- Use RMAN stand-alone and job commands

##### Configuring for Recoverability

- Configure and manage RMAN settings
- Configure persistent settings for RMAN
- View persistent settings
- Specify a retention policy
- Configure the Fast Recovery Area
- Explain the Fast Recovery Area
- Configure the Fast Recovery Area
- Configure control files and redo log files for recoverability
- Multiplex control files
- Multiplex redo log files

### Performing Basic Backup and Recovery

- Back up and recover a NOARCHIVELOG database
- Perform backup and recovery in NOARCHIVELOG mode
- Use SQL in RMAN

### Using the RMAN Recovery Catalog

- Create and use an RMAN recovery catalog
- Configure a recovery catalog
- Register target databases in a recovery catalog
- Catalog additional backup files
- Resynchronize a recovery catalog
- Use and maintain RMAN stored scripts
- Upgrade and drop a recovery catalog
- Protect the RMAN recovery catalog
- Back up the recovery catalog
- Re-create an unrecoverable recovery catalog
- Export and import the recovery catalog

### Implementing Backup Strategies

- Use various RMAN backup types and strategies
- Enable ARCHIVELOG mode
- Create tape and disk based backups
- Create whole database backups
- Create consistent and inconsistent backups
- Create backup sets and image copies
- Create backups of read-only tablespaces
- Employ best practices for data warehouse backups

### Performing Backups

- Perform full and incremental backups
- Create full and incremental backups
- Use the Oracle-suggested backup strategy
- Manage backups
- Configure and monitor block change tracking
- Report on backups using LIST, REPORT commands
- Manage backups using CROSSCHECK, DELETE commands

## Configuring RMAN Backup Options and Creating Backup of Non-Database Files

- Use techniques to improve backups
- Create compressed backups
- Create multi-section backups of very large files
- Create proxy copies
- Create duplexed backup sets
- Create backups of backup sets
- Create archival backups
- Perform backup of non-database files
- Back up a control file to trace
- Back up archived redo log files
- Back up ASM diskgroup metadata

## Using RMAN-Encrypted Backups

- Create RMAN-encrypted backups
- Use transparent-mode encryption
- Use password-mode encryption
- Use dual-mode encryption
- Restore encrypted backups

## Diagnosing Failures

- Describe the Automatic Diagnostic Workflow
- Use the Automatic Diagnostic Repository
- Use ADRCI
- Find and interpret message output and error stacks
- Use the Data Recovery Advisor
- Handle block corruption
- Detect block corruption using RMAN
- Perform block recovery using RMAN

## Performing Restore and Recovery Operations

- Describe and tune instance recovery
- Perform complete and incomplete recovery
- Use RMAN RESTORE and RECOVER commands
- Restore ASM disk groups
- Recover from media failures
- Perform complete and incomplete or "point-in-time" recoveries using RMAN

### Recovering Files Using RMAN

- Perform recovery for spfile, password file, control file, redo log files
- Perform table recovery from backups
- Perform recovery of index and read-only tablespaces, temp file
- Restore a database to a new host

### Using Oracle Secure Backup

- Configure and use Oracle Secure Backup

### Using Flashback Technologies

- Describe the Flashback technologies
- Configure a database to use Flashback technologies
- Guarantee undo retention
- Use Flashback to query data
  - Use Flashback Query
- Use Flashback Version Query
- Use Flashback Transaction Query
- Flash back a transaction
- Perform Flashback Table operations
- Perform Flashback Table
- Restore tables from the recycle bin
- Describe and use Flashback Data Archive
- Use Flashback Data Archive
- Use DBMS\_FLASHBACK\_ARCHIVE package

### Using Flashback Database

- Perform Flashback Database
- Configure Flashback Database
- Perform Flashback Database

### Transporting Data

- Describe and use transportable tablespaces and databases
- Transport tablespaces between databases using image copies or backup sets
- Transport databases using data files or backup sets
- Transport data across platforms

## Duplicating a Database

- Choose a technique for duplicating a database
- From an active database, connected to the target and auxiliary instances
- From backup, connected to the target and auxiliary instances
- From backup, connected to the auxiliary instance, not connected to the target, but with recovery catalog connection
- From backup, connected to the auxiliary instance, not connected to the target and the recovery catalog
- Duplicate a database with RMAN
- Create a backup-up based duplicate database
- Duplicate a database based on a running instance

## Monitoring and Tuning of RMAN Operations

- Tune RMAN performance
- Interpret RMAN error stacks
- Diagnose performance bottlenecks
- Tune RMAN backup performance

## Managing Pluggable and Container Databases

### Multitenant Container and Pluggable Database Architecture

- Describe the multitenant container database architecture
- Explain pluggable database provisioning

### Creating Multitenant Container and Pluggable Databases

- Configure and create a CDB
- Create a PDB using different methods
- Unplug and drop a PDB
- Migrate a non-CDB database to PDB

### Managing a CDB and PDBs

- Establish connections to CDB/PDB
- Start up and shut down a CDB and open and close PDBs
- Evaluate the impact of parameter value changes

### Managing Storage in a CDB and PDBs

- Manage permanent and temporary tablespaces in CDB and PDBs

### Managing Security in a CDB and PDBs

- Manage common and local users
- Manage common and local privileges
- Manage common and local roles
- Enable common users to access data in specific PDBs

### Managing Availability

- Perform backups of a CDB and PDBs
- Recover PDB from PDB datafiles loss
- Use Data Recovery Advisor
- Duplicate PDBs using RMAN

### Managing Performance

- Monitor operations and performance in a CDB and PDBs
- Manage allocation of resources between PDBs and within a PDB
- Perform Database Replay

### Moving Data, Performing Security Operations and Interacting with Other Oracle Products

- Use Data Pump
- Use SQL\*Loader
- Audit operations
- Use Other Products with CDB and PDBs - Database Vault, Data Guard, LogMiner