# Sri Lanka Institute of Information Technology

# B.Sc. Honours Degree/Diploma
in
## Information Technology
## (Specialized in Computer Systems & Network Engineering)

Final Examination
Year 2, Semester I (2019)

# IE2080 – Database Systems Administration

> Duration: 2 Hours

## June, 2019

**Instructions to Candidates:**

♦ This paper is preceded by a **10**-minutes reading period. The supervisor will indicate when answering may commence.

♦ This paper has **3** questions with a total of 100 marks.

♦ Answer all the questions in the booklet given.

♦ This paper contains **4** pages including the cover page.

♦ Students are allowed to bring one side written A4 paper with them, pre-marked by the lecturer-in-charge

# Question 1                                                    (30 Marks)

a) "Oracle is so powerful and widely used in industry". Briefly explain using key features of Oracle server?                                                    (4 marks)

b) Sketch a component diagram of Oracle server (diagram should include all the components of Oracle instance and Oracle database).                      (6 marks)

c) What are the information available in following files and memory locations?  (8 marks)

    i.    Library cache

    ii.   Redo log buffer

    iii.  Control file

    iv.   Data files

d) Differentiate Oracle instance and database.                        (4 marks)

e) ABC Company is seeking to implement a new database system to address growing shortcomings in the current membership/contact management system. Company's director board was decided to migrate to Oracle database. What are the steps that a database administrator should perform to implement Oracle database for the company

                                                                (8 marks)

# Question 2                                                    (30 Marks)

a) List four components in Oracle database logical storage structure.    (2 marks)

b) Explain how logical storage structure match with physical structure with the support of a diagram.                                                      (5 marks)

c) Using a diagram illustrates the Oracle database startup sequence indicating the states and file(s) used when switching from one state to another along with appropriate phases.                                                         (6 marks)

d) A privilege is a right to execute a particular type of SQL statement or to access another user's object. Compare **system, object** and **role privileges** available in Oracle.

                                                                (9 marks)

e) Figure 1 is a screenshot taken while the user trying to connect to the Oracle database. Provide answers to the following questions by referring to figure 1.

    i.    An error message is indicated (figure 1) while trying to connect to the Oracle DB. Briefly explain the reason behind such an error?     (4 marks)

    ii.    What you can do to eliminate the error?     (4 marks)

        Hint: Provide suitable command to fix the issue

```
$ sqlplus system@orcl

SQL*Plus: Release 12.2.0.1.0 Production on Mon Jul 25 07:14:15 2016

Copyright (c) 1982, 2016, Oracle.  All rights reserved.

Enter password: Enter password here
ERROR:
ORA-12541: TNS:no listener


Enter user-name:
```

Figure 1

# Question 3         (40 Marks)

a) Briefly explain four primary background processes available in a running Oracle instance.     (5 marks)

b) What is the advantage of RMAN utility in Oracle backup and recovery management?

    (4 marks)

c) Compare Undo Data Vs Redo Data in Oracle database management     (6 marks)

d) What are the significant benefits of Automatic Database Diagnostic Monitor (ADDM) with respect to Oracle database performance monitoring?     (5 marks)

e) A system administrator has developed a container database named 'DSACDB' with a single instance. A pluggable database 'DSAPDB' was created with 'Student_Schema' activated. The system admin uses 'sqlplus' utility for administration purpose.

i. Name a query to startup the database. (2 marks)

ii. Produce a query to view HTTPS port number assign for '**DSACDB**'. (4 marks)

iii. Identify a query to move from the container database to the pluggable database.

(4 marks)

iv. Write a query to set the port number of '**DSAPDB**' into **5503.** (4 marks)

v. Construct a set of queries to create a role called '**APPDEV**' and assign '**CREATE SEQUENCE, CREATE TABLE** and **CREATE SESSION**' privileges to the '**APPDEV**' role. (6 marks)

Hint: You may have to write two queries. Use role password as '**dev123**'

# End of the Question Paper