Adventist University of Central Africa
P.O. Box 2461 Kigali, Rwanda | www.auca.ac.rw | info@auca.ac.rw

STUDENT CODE:

STUDENT NAME:

PLSQL MIDTERM EXAM-SUNDAY GROUP

DATE: 01/05/2022

DURATION: 3 HOURS

INSTRUCTIONS

THIS EXAM HAS 5 MANDATORY SECTIONS

- Use one statement to respond to all the questions in SECTION A
- Use one statement to respond to all the questions in SECTION B
- Use one statement to explain the output of each and every program written in SECTION C and then write the program output in the provided output box.
- Do any two programs of your choice from SECTION D
- Respond to the question in SECTION E. **Make sure that all the possible exceptions are well handled**
- Use the provided boxes to write your answers
- No additional answer sheet will be used or provided
- The whole exam is out of **80 MARKS**

SECTION A /10 MARKS

1) What happens to a PLSQL program when an IF statement lacks an ELSE clause?

2) How do you declare a %rowtype data type? (Syntax)

3) How do you declare a %type data type? (Syntax)

4) What is the command used to get the server output result and display it into the screen (command line)?

5) When is this error: ROWTYPE_MISMATCH raised?

6) When is this error: CASE_NOT_FOUND raised?

7) What is the use of a SELECTOR in a simple case statement?

8) How do you raise a custom error number within a PLSQL program?

9) What is the importance of using the Keyword CONSTANT during a variable declaration?

10) What control structures are executed iteratively (Repeatedly)?

SECTION B /10 MARKS

Respond by TRUE or FALSE and explain your answer in one statement

1) The BEGIN keyword starts the variable declaration sections of a PL/SQL block.

2) The two parts of every loop are: the loop boundary and the loop index.

3) PL/SQL does not have data types or variables.

4) A loop can have a body with no executable statements.

5) Global variables cannot be accessed inside a nested IF block.

SECTION C /20 MARKS

What is the output of these programs?

1) First Program

```
DECLARE
    X NUMBER: =5;
    Y NUMBER;
BEGIN
Y: =
CASE X
WHEN 2 THEN 'Small value'
WHEN 3 THEN 'Mid value'
WHEN 5 THEN 'Large value'
ELSE NULL
END;
dbms_output.put_line(Y);
END;
```

2) Second Program

```
DECLARE
    X   NUMBER: =5;
BEGIN
CASE X
```

```
WHEN 2 THEN dbms_output.put_line('Small value');
WHEN 3 THEN dbms_output.put_line('Mid value');
WHEN 4 THEN dbms_output.put_line('Large value');
END CASE;
END;
```

3) Third Program

```
DECLARE
   X  NUMBER: =5;
   Y  NUMBER: =23;
BEGIN
   IF (X>Y) THEN dbms_output.put_line('X is greater than Y');
   END IF;
END;
```

4) Fourth Program

```
DECLARE
        v_num number: =1;
BEGIN
        while (v_num <= 10) LOOP
                dbms_output.put_line(''||v_num);
                v_num := v_num+2;
        END LOOP;
END;
```

5) Fifth Program

```
DECLARE
        i number;
BEGIN
        i: = 0;
        LOOP
         i: = i+2;
         dbms_output.put_line(i);
        exit WHEN i > 10;
        END LOOP;
END;
```

SECTION D /20 MARKS

Answer any two questions of your choice

1) Write a PL/SQL program to check whether a given character is letter or number

2) Write a PL/SQL Program to check the greatest input among 3 numbers.

3) Write a PL/SQL Program to swap two numbers

SECTION E /20 MARKS

Write a program that updates the marks of a student whose total marks is lower or equal to 45 and has a student code higher than or equal to 10. The marks should be updated with 10% of the total student's marks and the new marks should be should be updated in the database. After update, the program should insert the student_code, the first_name, the last_name and the 10% of the total marks into a table called temp_student_table to record the changes made on the student's marks. The columns of the student table and the temp_student_table table are as follow:

STUDENT table:

STUDENT_CODE	FIRST_NAME	LAST_NAME	TOTAL_MARKS

TEMP_STUDENT_TABLE

STUDENT_CODE	S_FIRSTNAME	S_LASTNAME	PERCENTAGE_OF_TOT_MARKS