EXERCISE-16

PROCEDURES AND FUNCTIONS

PROCEDURES

DEFINITION

A procedure or function is a logically grouped set of SQL and PL/SQL statements that perform a specific task. They are essentially sub-programs. Procedures and functions are made up of,

- Declarative part
- Executable part
- Optional exception handling part

These procedures and functions do not show the errors.

KEYWORDS AND THEIR PURPOSES

REPLACE: It recreates the procedure if it already exists.

PROCEDURE: It is the name of the procedure to be created.

ARGUMENT: It is the name of the argument to the procedure. Paranthesis can be omitted if no arguments are present.

IN: Specifies that a value for the argument must be specified when calling the procedure ie. used to pass values to a sub-program. This is the default parameter.

OUT: Specifies that the procedure passes a value for this argument back to it's calling environment after execution ie. used to return values to a caller of the sub-program.

INOUT: Specifies that a value for the argument must be specified when calling the procedure and that procedure passes a value for this argument back to it's calling environment after execution.

RETURN: It is the datatype of the function's return value because every function must return a value, this clause is required.

PROCEDURES – SYNTAX

```
create or replace procedure <procedure name> (argument {in,out,inout} datatype ) {is,as}
variable declaration;
constant declaration;
begin
PL/SQL subprogram body;
exception
exception PL/SQL block;
end;
```

FUNCTIONS – SYNTAX

```
create or replace function <function name> (argument in datatype,……) return datatype {is,as}
variable declaration;
```

Program 1

FACTORIAL OF A NUMBER USING FUNCTION

```
CREATE or replace Function
get_factorial (P_num IN NUMBER)
RETURN NUMBER

IS
 v_fact NUMBER := 1;
BEGIN
If p_num<0 THEN
      RETURN NULL
ELSE IF p_num=0 THEN
    RETURN 1;

ELSE
  FOR i IN 1..P_num LOOP
  V_FACT := v_fact * i;
  END LOOP.
  RETURN v_fact;
  END IF;
  END;

SET SERVEROUTPUT ON;
DECLARE
V_RESULT NUMBER;
BEGIN
V_Result:= get_factorial

DBMS_output_putline
  ('factorial of 5 is
   '|| v_result);

  END;
```

Program 2

Write a PL/SQL program using Procedures IN,INOUT,OUT parameters to retrieve the corresponding book information in library

```
CREATE or replace procedure
manage_book_info(
r_book_id IN
library_books, book_id %Type;
r-title out
library_books. title %TYPE,
r author out
library books author %TYPE,
P_copies in_out INout
library_books . copies available %TYPE,
```

```
IS
v_author_table varchar
BEGIN
Select title, author,
copies_available into
P_title, p_author,
n_copies _in_out
From library books
where book_id =
p. book id ;
```

Evaluation Procedure	Marks awarded
PL/SQL Procedure(5)	
Program/Execution (5)	
Viva(5)	
Total (15)	
Faculty Signature	