Adventist University of Central Africa
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Course Title: INSY 317 DBMS: PL/SQL Programming 16/11/2021

MID SEMESTER EXAM

INSTRUCTIONS: ***Attempt all questions (3 hours). From question 2 to 5, you are requested to execute programs then write responses in the booklet and submit the softcopy saved in a folder with your Name and ID.***

QUESTION 1: 10 Marks

a. Differentiate between % ROWTYPE and TYPE RECORD.
b. Explain uses of cursor.
c. Show code of a cursor for loop.
d. Define Implicit and Explicit Cursors.
e. When is a declare statement required?
f. Show the cursor attributes of PL/SQL.
g. What does fetching a cursor do?
h. What does closing a cursor do?
i. Differ between Anonymous blocks and sub-programs
j. What are SQL statement used in DDL?

QUESTION 2: 5 Marks

Create the following table 'Courses', if these tables exist in the HR database remove it.

Courses table should have the following columns:

- course_id which is text having 3 characters , Courde_id will be a primary key.
- course_Title which is a varchar 30 characters long.

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Write a PL/SQL program to insert the following values in 'Courses' table using scalar data type

1. CS1, Computing Science
2. HS1, History
3. GE1, Geography

```
declare
course_id varchar(3);
course_title varchar(30);
begin
course_id:='CS1';
course_title:= 'Computer Science';
insert into courses values (course_id,course_title);
course_id:='HS1';
course_title:= 'History';
insert into courses values (course_id,course_title);
course_id:='GE1';
course_title:= 'Geography';
insert into courses values (course_id,course_title);
end;
```

QUESTION 3: 5 Marks

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Write a PL/SQL program to check whether the day is SATURDAY or SUNDAY when a number from 0 to 9 is entered. Note that Saturday is the 7th day of the week. Take in account the data type to be used.

```
declare
input number(1):=:enter_the_number_btn_0_and_9;
begin
case input
when 7 then
dbms_output.put_line('we are on Saturday');
when 1 then
dbms_output.put_line('we are on Sunday');
else
dbms_output.put_line('invalid input');
end case;
```

end;

QUESTION 4: 5 Marks

Write a PL/SQL program to display the full name (first and last) name and salary for all employees whose salary is out of the range 7000 and 15000 and make the result set in ascending order by the full name. Use composite data type (**%type**) for each variable.

declare

emp_first_name employees.first_name%type;

emp_last_name employees.last_name%type;

emp_salary employees.salary%type;

cursor cur is

select first_name ,last_name,salary from employees where salary not between 7000 and 15000 order by first_name asc;

begin

open cur ;

loop

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```
fetch cur into emp_first_name,emp_last_name,emp_salary;

dbms_output.put_line(emp_first_name || emp_last_name || emp_salary);

exit when cur%notfound;

end loop ;

close cur;

end;
```

QUESTION 5: 5 Marks

Write a program in PL/SQL to display a table based detail information: first and last name, salary and department ID for those employees who earn more than the minimum salary of a department which ID is 40.

```
declare

cursor emp_display is

select first_name,last_name,salary, department_id from employees where salary>(select min(salary) from employees where department_id = 40);

emp_info emp_display%rowtype;
```

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```
begin

open emp_display;

loop

fetch emp_display into emp_info;

dbms_output.put_line(emp_info.first_name||' '||emp_info.last_name||'
'||emp_info.salary||' '||emp_info.department_id);

exit when emp_display%notfound;

end loop;

close emp_display;

end;
```