- Please check that this question paper contains 6 printed pages.
- Code number given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
- Please check that this question paper contains 7 questions.
- Please write down the serial number of the question before attempting it.

INFORMATICS PRACTICES

Time allowed : 3 hours   *Maximum Marks : 70*

Note :

   (i)   All questions are compulsory.

   *(ii) **Section A** consists of 30 marks.*

   *(iii) **Section B** and **Section C** are of 20 marks each.*

   (iv) Answer the questions after carefully reading the text.

SECTION A

1.   Answer the following questions :

   (a)   Define Data Warehousing and explain its usage.   2

   (b)   What do you understand by the term SDLC ? Name its essential components.   2

   (c)   Explain the term Front End Tool and Back End Tool in the context of software development process.   2

   (d)   What is the Entity Relationship Model ? Explain the concept of ER Model using the case study of a School that has three entities : Student, Teacher and Subject. Assume that each student can study more than one subject while each teacher can teach only one subject.   4

2.   Answer the following questions :

   (a)   What are conditional or decision control statements ? Name the two conditional statements used in Visual Basic.   2

   (b)   Differentiate between public and private variables and discuss their scope of visibility.   2

   (c)   Explain the terms ODBC and OLE-DB.   2

   (d)   Differentiate between SDI Form and MDI Form in Visual Basic. In the Similar context, explain the concept of parent and child forms.   4
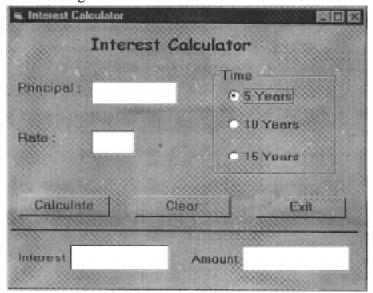
1

3. Answer the following questions :

    (a) Differentiate between DML and DCL giving suitable example in each case.   2

    (b) What is NULL value ? What is the result of an arithmatic operation containing NULL value ?   2

    (c) What is the use of a Sub-Query ? Which query gets executed first, the parent query or the sub query ?   2

    (d) Which PL/SQL command is used to display an output on the screen ? Also name the command used to enable the server output option before using the above command.   2

    (e) Differentiate between Row-level and Statement-level triggers in PL/SQL.   2

SECTION B

4. Read the following case study and answer the questions that follow :

Mr. Rouble of Passawasool Financiers frequently needs to calculate the interest and amount due from his clients. He asks his software programmer to design an interest calculator which will calculate the compound interest and amount due if a person takes a loan for 5, 10 or 15 years. The programmer opts for Visual Basic Language to develop this and creates the following form :

The List for the above form is as follows :

Object Type	Object Name	Description
Form	frmInterestCalc	The Main Form Object
Text Box	txtPrincipal	To enter the principal
	txtRate	To enter the interest rate
	txtInterest	To display the compound interest
	txtAmount	To display the amount due
Option Buttons	opt5years	To select time as 5 years
	opt10years	To select time as 10 years
	opt15years	To select time as 15 years
Command Button	cmdCalculate	To calculate the interest and amount
	cmdClear	To clear all the entered data
	cmdExit	To end the application

(a) Write the code to disable the textboxes txtInterest and txtAmount in the form load event of frmInterestCalc.   2

(b) Write the code for cmdClear Command Button to clear all the textboxes and set default choice in the Option Buttons as 5 years. Also set the focus to textPrincipal.   2

(c) Write the code for the Change event of the textboxes txtPrincipal and txtRate to ensure that the user enters only numeric values in them.   2

(d) Write the code for the Click event of the command button cmdCalculate to calculate the compund interest and amount depending on the principal, rate and time. The compound interest is calculated as P*(1+R/100)^T and amount as (Principal + Compount Interest).   4

3

5. Answer the following questions :

(a) A student wants to write a procedure to find if a given year is a leap year or not. He had written the following code segment and he is unable to correct some of the errors in the code. Find the Errors and rewrite the corrected code underlining the correction made.   2

Note : A leap year is a year which is divisible by 4 or divisible by 400.

```
'Program code to check if a year is a leap year or not
Private Sub cmdLeapyear_ONClicking ()
    Y=Val (textyear)
    IF Y Mod 100 = 0 and Y Mod 400 = 0
       MsgBox "It is a Leap Year"
    ELSEIF Y Mod 4 = 0
       MsgBox "It is a Leap Year"
    ELSE
       MsgBox "It is not a Leap Year"
Sub End
```

(b) Find the output of the following code segment :   2

```
Private Sub cmdClickMe_Click()
    Dim N1, N2, Counter
    Counter = 1
    N1 = 0
    N2 = 1
    Do while Counter <= 4
       Print N1
       Print N2
       N1 = N1 +N2
       N2 = N2 + N1
       Counter = Counter + 2
    Loop
End Sub
```

(c) Rewrite the following code segment using If...Elself...EndIf instead of Select...Case.   2

```
Select Case marks
Case Is >= 85
   comment.Caption = "Excellent"
Case Is >= 60
   comment.Caption = "Above Average"
Case Is >= 50
   comment.Caption = "Average"
Case Else
   comment.Caption = "Need to work harder"
End Select
```

(d) Write a Visual Basic function that takes an integer argument N and returns the sum of all even numbers less than the given number N.   4

6. Read the questions given below and answer accordingly :

(a) Write the output produced by the following part of code in PL/SQL : 2

```
DECLARE
    COUNT NUMBER:=10;
    SUM NUMBER := 0;
BEGIN
    LOOP
        SUM = SUM + COUNT;
        DBMS_OUTPUT.PUT_LINE (TO_CHAR(SUM));
        COUNT := COUNT - 2;
        IF COUNT = 2 THEN
            EXIT;
        END IF;
    END LOOP;
END;
```

(b)

EMPNO	ENAME	DEPTNO	SAL
7839	KING	10	5000
7782	CLARK	10	2450
7934	MILLER	10	1300
7788	SCOTT	20	3000
7902	FORD	20	3000
7566	JONES	20	2975
7876	ADAMS	20	1100
7369	SMITH	20	800
7698	BLAKE	30	2850
7499	ALLEN	30	1600
7844	TURNER	30	1500

Look at the Emp table given above and give the output produced by the following PL/SQL code on execution : 2

```
DECLARE
    Sum_Sal    Emp.Sal%TYPE;
    s_Sal      Emp.Sal%TYPE:=2000;
    s_Dept     Emp.Deptno%Type:=20;
BEGIN
  SELECT SUM (Sal) INTO Sum_Sal FROM Emp WHERE Deptno=s_Dept AND Sal>s_Sal;
  DBMS_OUTPUT.PUT_LINE(TO_CHAR(Sum_Sal));
END;
```
2

(c) Differentiate between the IN and OUT parameters of a PL/SQL procedure. 2

(d) Write a PL/SQL Function Power that takes two numbers as arguments and returns the value of the first number raised to the power of the Second. 4

7. Answer the questions based on the table Employee given below :

Table : Employee

Column Name	Data Type	Size	Constraint	Description
Emp_ID	NUMBER	8	PRIMARY KEY	Employee's Indentification number
First_Name	VARCHAR2	25	NOT NULL	First name of employee
Last_Name	VARCHAR2	25		Last name of employee
Date_Join	DATE			Date of joining
Basic_Sal	NUMBER	8, 2		Basic salary
Dept_ID	NUMBER	3		Department number

(a) Write the SQL command to create the table **Employee** including the constraints. 2

(b) Write the SQL command to display first name, date of joining and department id of employees from the Employee table who are hired between March 20, 1991, and December 31, 1991. Order the query in ascending order of date of joining. 2

(c) Write a PL/SQL command to create a view, which contains **Emp_ID** and **Bonus** where Bonus is 12% of the **Basic_Sal.** 2

(d) Write a PL/SQL block to delete all the rows of a particular department from the table **Employee** where the department id to be deleted is accepted from the user. 4