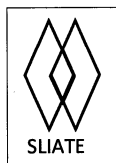# SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

Higher National Diploma in Information Technology
Second Year, First Semester Examination – 2017
HNDIT2311- Rapid Application Development

Instructions:		
Answer any five (05) questions only.	No. of questions	: 06
All questions carry equal marks.	No. of pages	: 07
	Time	: Three (03) hours

1)

   a) Give four (04) characteristics of rapid application Development. [04 Marks]

   b) Briefly explain the term "Classic Mistakes". [03 Marks]

   c) Give four (04) categories of "Classic Mistakes" . [04 Marks]

   d) What do you mean by "Commercial Off-the-Shelf" (COTS) based development. Give the advantages of COTS based development rather than other traditional development. [05 Marks]

   e) Briefly explain when it is more suitable to use rapid application development. [04 Marks]

[Total Marks 20]

2)

   a) Write three (03) properties of variable. [03 Marks]

   b) Give three (03) rules you follow when you define a variable? [03 Marks]

   c) What is the difference of implicit type conversion and explicit type conversion? [04 Marks]

   d) Following interface has been created to register student for SLIATE examination.

Category	Control	Property	Value
Label	lblName	Name	lblName
		Text	Name
	lblAti	Name	lblAti
		Text	ATI/ATI Section
	lblSex	Name	lblSex
		Text	Sex
	lblDob	Name	lblDob
		Text	Date of Birth
	lblAge	Name	lblAge
		Text	Age
	lblRegNo	Name	Lblregno
		Text	Reg.No
Text box	txtName	Name	txtName
		Text	Name
MaskedTextBox	masktxtRegno	Name	masktxtRegno
		Mask	\A\MP/IT/2\0\17/F/0000
DateTimePicker1	dtpDob	Name	dtpDob
Radio Button	radMale	Name	radMale
		Text	Male
		checked	True
	radFemale	Name	radFemale
		Text	Female
		checked	False
Combo Box	cmbAti	Name	cmbAti
		Items	Ampara
			Anuradhapura
			Badulla
			Baticaloa
List Box	lstDetails	Name	lstDetails
		text	
Button	btnSubmit	Name	btnSubmit
		Text	Submit

Fill in the blanks (1 to 10) of following source code considering above form and table.

```
Dim name As String
Dim ati As String
Dim sex As String
Dim dob As (1)..................              [01 Marks]
Dim age As (2)..................              [01 Marks]
Dim regno As  String

name = (3)..................                  [01 Marks]
ati = (4)..................                    [01 Marks]
If radMale.(5).................. Then          [01 Marks]
     sex = "Male"
ElseIf RadFemale.(6).................. Then    [01 Marks]
     sex = "female"
End If
dob = (7)..................                    [01 Marks]
age = (8)..................                    [01 Marks]
regno = (9)..................                  [01 Marks]
(10)..................("Student Information")   [01 Marks]
.................. ("-----------------------")
.................. ("Student Name :" & name)
.................. ("ATI/ATI Section :" & ati)
.................. ("Sex :" & sex)
.................. ("Date of Birth:" & dob)
.................. ("Age :" & age)
.................. ("Reg Number :" & regno)
```
[Total Marks 20]

3)
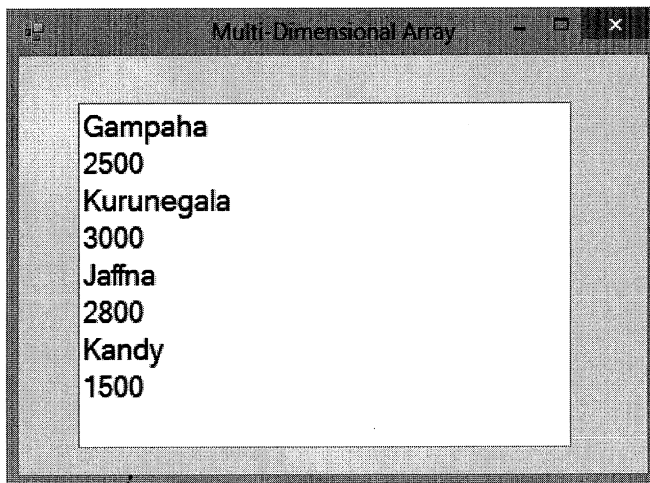   a) Give four (04) control structures available in VB.NET for repetitions.   [04 Marks]
   b) Write a Visual Basic code (Windows Application) to find the factorial value of any given number using input box and display in textbox.   [05 Marks]
      Hint : factorial of 4 is 4×3×2×1=24
   c) Write VB.Net array declaration for a multi-dimensional array to keep following data.   [04 Marks]

ATI Name	No of Student
Gampaha	2500
Kurunegala ·	3000
Jaffna	2800
Kandy	1500

   d) Write a VB.Net code segment to display the content of above multidimensional array in a textbox as shown in following figure. *Hint: use for loop*   [05 Marks]
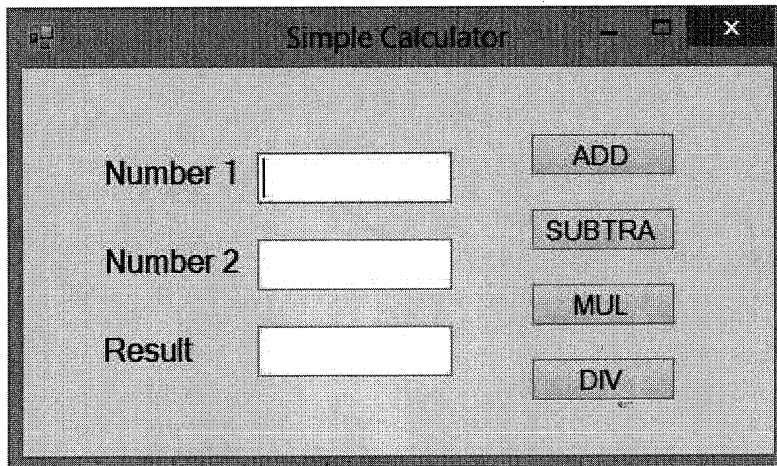

   e) What is the method available in VB.NET to take total number of elements in a multidimensional array?
      [02 Marks]

[Total Marks 20]

4)
a) Write the syntaxes for VB.NET function and sub procedure. [04 Marks]
b) What is the difference between passing by Value and passing by reference? Give an example for each. [04 Marks]
c) Write suitable VB.NET functions or sub procedures for the following interface.

i. Addition of two numbers. [03 Marks]
ii. Subtraction of two numbers. [03 Marks]
iii. Multiplication of two numbers. [03 Marks]
iv. Division of two numbers. [03 Marks]

[Total Marks 20]

5)
a) Consider the following two programs and answer the questions given below.

Program A

```
Public Class Form4

    ' Private Sub Button1_Click(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Button1.Click
        Dim objv As New Toyota
        objv.drive("Driving a Toyota Car....")

    End Sub
End Class

Public Class vehicle
    Public Sub drive()
        MsgBox("Driving a Car .....")
    End Sub
End Class
```

```
Public Class Toyota
    Inherits vehicle
    Public Overloads Sub drive(ByVal text As String)
        MsgBox(Text)
    End Sub
End Class
```

Program B

```
Public Class Form4

    Private Sub Button1_Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles Button1.Click
        Dim objv As New Toyota
                objv.drive()
    End Sub
End Class


Public Class vehicle
    Public Overridable Sub drive()
        MsgBox("Driving a Car .....")
    End Sub
End Class


Public Class Toyota
    Inherits vehicle
    Public Overrides Sub drive()
        MsgBox("Driving a Toyota Car....")
    End Sub
End Class
```

    i. What will be the output of program A?   [02 Marks]

    ii. What will be the output of program B?   [02 Marks]

    iii. What are the object oriented concepts use in above programs? Briefly explain it.

              [04 Marks]

    iv. Briefly explain the difference of overloading methods and overiding methods.

              [04 Marks]

b) Write a class called "Cal" for calculate followings.   [08 Marks]

    i.   Take addition of two numbers

    ii. Take power (x^2) of a number

    iii. Take reminder of two numbers

[Total Marks 20]

6) Consider following interface and answer the following interface.

a) Write the code segment for creating a database connection for above form with the SQLServer Database. [05 Marks]

Hint: Data Source=SLIATE(database name); Initial Catalog=Lecturer(table name);Integrated Security=True

Table Name :lecturerTB

b) Write the code segment to insert a record into the database. (Add Button) [05 Marks]

c) Write the code segment to update the status of a lecturer who has NIC number 80818448. (Update Button). [05 Marks]

d) Write the code segment to view the first record of the table. (First Button). [05 marks]

[Total Marks 20]