

[All Rights Reserved]



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 – 2018

HNDIT2311- Rapid Application Development

Instructions:

Answer any five (05) questions only.

All questions carry equal marks.

No. of questions : 06

No. of pages : 07

Time : Three (03) hours

Question 01

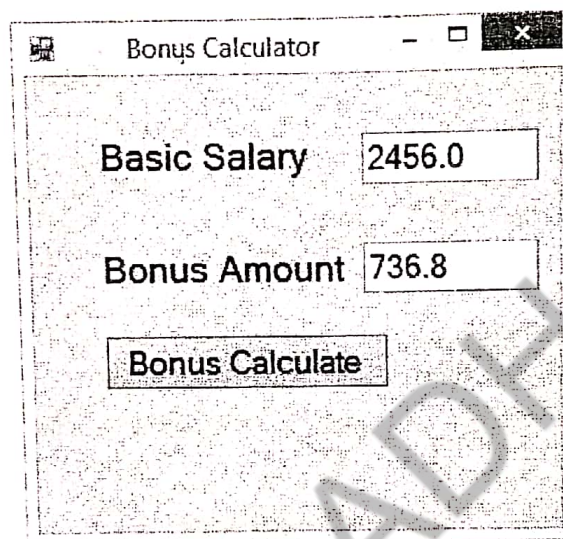
- ✓ a) Explain the term “Rapid Application Development” and state any two key objectives of RAD. [04 Marks]
 - ✓ b) “Traditional software development methodologies have certain issues”. State and briefly explain three (03) of such issues. [06 Marks]
 - ✓ c) Briefly explain two (02) types of classic mistakes. [04 Marks]
 - d) Justify the following statements.
 - i) “Rapid application development tools support the effective development” [03 Marks]
 - ii) “Rapid application development is not suitable for all type of software”. [03 Marks]
- [Total Marks 20]**

Question 02

- ✓ a) Give two operators for the following types with examples.
 - i) Mathematical operators
 - ii) Relational operators[2x2 Marks]
- ✓ b) i) Give four (4) logical operators in their precedence order (highest to lowest). [4x1 Marks]
 - ii) $X = 2 * 4 + 6 - 8 / 4 + 2 * (7 \bmod 4)$
 What is the value of X after execution of above statement? [02 Marks]
- ✓ c) Write Visual Basic code to accept an integer values using input box and to display the square value of using message box. [04 Marks]

- ✓ d) Answer the questions given below by considering the following rate of bonus in salary and user interface.

Basic salary range	Percentage of Bonus
10000 and below	30%
10001-50000	20%
50001-100000	15%
More than 100000	10%



- Give the name for each of the above control according to the Visual Basic naming convention.
- Write visual basic codes to bonus calculate button click event shown in the interface

[02 Mark

[04 Mark

[Total Marks 20

Question 03

- ✓ a) Write the differences of the following control structures with examples.
- If Then Else VS Select Case

[04 Marks

- ✓ b) Write Visual Basic code (between the range of 1-100) to find out whether a given number is prime or not

[06 Marks

- ✓ c) Write the output of the following code segments.
i)

```
For I = 1 To 4
    For j = 1 To I
        TextBox1.Text = TextBox1.Text & I
    Next j
    TextBox1.Text = TextBox1.Text & vbCrLf
Next I
```

[04 Marks]

- ii) Output of button1_click.

```
Public Class Form1
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e
As System.EventArgs) Handles Button1.Click
    Dim x As Integer = 10
    Dim y As Integer = 15
    Dim z As Integer = 2

    Do While z < 5
        x += 1
        y += 1
        z += 2
    Loop
    Select Case x
        Case Is <= 5 :If y Mod 2 <> 0 Then y = y + 5
            x += 5
        Case Is <= 10 :If y Mod 2 <> 0 Then y = y + 10
            x += 10
        Case Is <= 15 :If y Mod 2 <> 0 Then y = y + 15
            x += 15
        Case Else :If y Mod 2 <> 0 Then y = y + 20
            x += 5
    End Select

    MsgBox(x & " " & y & " " & z)
End Sub
End Class
```

[06 Marks]

[Total Marks 20]

Question 04

- ✓ a) Describe the followings
- i. Procedure (sub)
 - ii. Functions. [2x2 Marks]
- b) Write Visual basic code for a function fact (number), which returns the factorial value of number. (fact(5) returns 1x2x3x4x5=120) [06 Marks]
- ✓ c) Explain the difference of the following two keywords
- i.) ByVal
 - ii.) ByRef [2x2 Marks]
- d) Write the message box output of the following code segments button1_click event
- i)

```
Public Class Form1
Private Sub Button1_Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles Button1.Click
```

```
posDif(3, 9)
```

End Sub

```
Sub posDif(ByVal x As Integer, ByVal y As Integer)
```

Dim z As Integer

$$z = x - y$$

If $z < 0$ Then $z = z * -1$

```
MsgBox(" difference is " & z)
```

End Sub

End Class

[02 Marks]

ii)

Public Class Form1

```
Private a As Integer = 14
```

```
Private b As Integer = 16
```

```
Private Sub Button1_Click(ByVal sender As System.Object,  
ByVal e As System.EventArgs) Handles Button1.Click
```

```
msgBox("result= " & Result(a,b) & "a= " & a & "b= " & b)
```

End Sub

```
function Result(ByVal x as integer, Byref y as integer) As integer
```

$$X = X + 1$$
$$Y=Y+1$$

Return $x+y$

End sub

End Class

[04 Marks]

[Total Marks 20]

1

Question 05

- ✓ a) Briefly explain the terms 'class' and 'object'. [04 Marks]
- ✓ b) Write a VB code for the following scenarios.
- i. Create Dog class with attributes of name-String which is not accessible outside the class. [02 Marks]
- ii. Dog class has Methods
- setName(name)- to assign a name to a dog.
 - showName()-to display the name by message box. [04 Marks]
- ✓ c) Explain the following terms with a suitable example
- i) Constructor of a class
- ii) Method overloading [04 Marks]
- ✓ d) What is the output of the following code segment? [06 Marks]

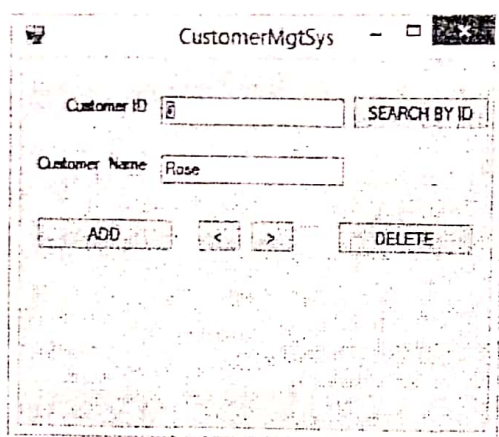
```
Public Class Car
    Public Overridable Sub Accelerate ( )
        System.console.writeline ("Speed increase by 10 km/h")
    End Sub
    Public Sub BreakFunction ( )
        System.console.writeline ("Speed reduced to 0 km/h")
    End Sub
End Class
Public Class RaceCar
    Inherits Car
    Public Overrides Sub Accelerate ( )
        System.console.writeline("Speed increase by 20 km/h ")
    End Sub
End Class
```

```
Module Module1
    Sub main ()
        Dim sc As RaceCar= New RaceCar ( )
        Dim c as Car=new Car()
        sc. Accelerate()
        c. Accelerate()
        sc. BreakFunction ()
    End sub
End Module
```

[Total Marks 20]

Question 06

The following prototype interface was created using VB.Net. The back end of the system was created using MS Access.



- a) "ADO.NET is Disconnected Data Access Architecture"
Explain the above statement? [02 Marks]
- b) The following code segment is used to connect above interface with the MS Access and to load the first record of table to fill data into textboxes. Fill in the blanks with suitable term.

```
Public Class CustomerFrm
    Private oledbCon As OleDb.OleDbConnection
    Private oledbDADB As OleDb.OleDbDataAdapter
    Private ds As DataSet
    Private oleConnectionString As String
    Private rec As Integer = 0

    Private Sub CustomerFrm_Load(ByVal sender As System.Object,
        ByVal e As System.EventArgs) Handles MyBase.Load
        oleConnectionString = "Provider=Microsoft.Jet.OLEDB.4.0;
            DataSource=C:\Users\Acer\Documents\customerData
            .mdb"
        'To initialize of connetion String

        Dim sql As String = "i_____"
        'sqlstament to get whole data of table customer

        oledbCon = New OleDb.OleDbConnection(ii_____)
        'To initialize oledb connection

        oledbDADB = New OleDb.OleDbDataAdapter(iii_____, oledbCon)
        'To initialize oledb data adapter

        ds = New DataSet
```

'To initialize data set
Try

oledbCon.Open("Provider=Microsoft.Jet.OLEDB.4.0;Data Source=...")
'To open a oledb connection

ds.Tables("cust").Fill(ds, "cust")
'To fill the data into dataset

oledbCon.Close()
'To close a oledb connection

Catch ex as exception

MsgBox("Problem in connection" & ex.message)

End Try

idTxt.Text = ds.Tables("cust").vi
nameTxt.Text = ds.Tables("cust").vii

End Sub
End Class

[1x7 Marks]

- c) Briefly explain the purpose of try catch used in the above code. [02 Marks]
- d) Write the code segment to save the information displayed in the form in the database.(Add Button)
Assume that the database contains a table with the following structure:
Customer (cId-integer, cName-text)

Customer	
cId	cName
0	Rose
1	Mery
2	Perera
3	Mohan
5	Ramesh

[05 Marks]

- e) Write the code segment to get the next record information of a customer. (> Button).

[04 Marks]

[Total Marks 20]