



**SLIATE**

**SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION**

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

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**Higher National Diploma in Information Technology**

**Second Year, First Semester Examination – 2016**

**HNDIT2311- Rapid Application Development**

**Instructions:**

Answer any five (05) questions only.

All questions carry equal marks.

No. of questions : 06

No. of pages : 05

Time : Three (03) hours

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**Q1.)**

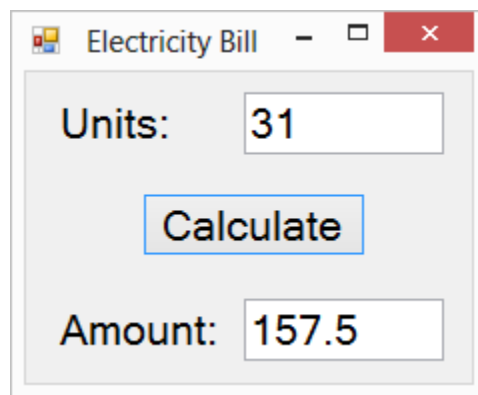
- a) Explain the term “Rapid Development”. [02 Marks]
- b) “RAD methodology attempts to overcome certain issues in traditional software development methodologies”. State and briefly explain three (03) of such issues. [06 Marks]
- c) Briefly explain two (02) types of classic mistakes. [04 Marks]
- d) Mention three (03) productivity tools that are used in rapid development. [03 Marks]
- e) “Rapid application development is known as a customer oriented methodology”. Justify this statement. [05 Marks]

**Q2.)**

- a) Give three relational operators with examples. [03 Marks]
- b) Give four (4) logical operators in their precedence order (highest to lowest). [04 Marks]
- c) Write Visual Basic code to accept two integer values using input box and to obtain the positive difference using message box.  
[For example if the inputs are 4 and 7 the output should be 3. If the inputs are 7 and 4 also output should be 3] [05 Marks]

- d) Answer the questions given below considering the following electricity charge rates and runtime interface.

Unit Range	Unit Price
30 and below	Rs. 5.00
31 – 60	Rs. 7.50
61 – 90	Rs. 11.00
91 and above	Rs. 15.00



- Give the names for each of the above controls according to the Visual Basic naming convention. [02 Marks]
- Write visual basic codes to calculate button click event shown in the interface [06 Marks]

**Q3.)**

- Write the differences of following control structures with examples.
  - Do While loop VS Do until loop [04 Marks]
- Write Visual Basic code to print prime numbers between 1 to 100. [05 Marks]
- Write the output of following code segments.

```
For i = 1 To 6 Step 1
    For j = 1 To i Step 1
        TextBox1.Text = TextBox1.Text & "*"
    Next j
    TextBox1.Text = TextBox1.Text & vbCrLf
Next i
```

[05 Marks]

ii) Output of button1\_click and button2\_click

```
PublicClassForm1
Public a As Integer = 25
Public b As Integer = 30
Friend total As Integer

PrivateSub Button1_Click(ByVal sender AsSystem.Object,
ByVal e AsSystem.EventArgs) Handles Button1.Click
Dim a As Integer = 10
Dim b As Integer = 20
total = a + b
    TextBox1.Text = total
End Sub

PrivateSub Button2_Click(ByVal sender AsSystem.Object,
ByVal e AsSystem.EventArgs) Handles Button2.Click
total = a + b
    TextBox2.Text = total
End Sub
End Class
```

[06 Marks]

**Q4.)**

- a) What is the differences between a function and a sub procedure? Write the VB.NET syntax for above . [04 Marks]
- b) Give (04) four access modifiers and describe them. [04 Marks]
- c) Explain the deference between following two keywords
  - i.) ByVal ii.)ByRef [04 Marks]
- d) Write private VB.net functions for followings. [08 Marks]
  - i.) Function Total(m1,m2,m3)- To calculate total marks of three subjects.
  - ii.) Function Average(m1,m2,m3)- To return average marks of three subject.

**Q5.)**

- a) Briefly explain the terms 'class' and 'object'. [04 Marks]
- b) Mention three (03) qualities of an object. [03 Marks]
- c) Briefly describe overloaded methods of a class. [04 Marks]
- d) Briefly explain inheritance. [03 Marks]
- e) What is the output of the following code segment? [06 Marks]

```
Public Class BaseClass
    Public Overridable Sub OverrideMethod( )
        System.console.writeline ("Base OverrideMethod")
    End Sub
    Public Sub OtherMethod( )
        System.console.writeline ("Base OtherMethod – not overridable")
    End Sub
End Class
```

```
Public Class DerivedClass
    Inherits BaseClass
    Public Overrides Sub OverrideMethod( )
        System.console.writeline("Derived OverrideMethod")
    End Sub
End Class
```

```
Module Module1
    Sub main ( )
        Dim x As DerivedClass = New DerivedClass( )
        x.OtherMethod()
        x.OverrideMethod()
    End sub
End Module
```

Q6.)

The following interface was created using VB.Net to facilitate student registration activities of ATIs. The back end for the system has been created using Microsoft SQL Server.

The screenshot shows a Windows application window titled "StudentRegistration". It has a standard Windows title bar with minimize, maximize, and close buttons. The main area contains five labeled input fields arranged vertically. The first field is "Student No" with the text "IT003" and a "Load" button to its right. The second field is "Student First\_Name" with the text "Priantha". The third field is "Student Age" with the text "22". The fourth field is "Course attend" with a dropdown menu showing "HNDIT". The fifth field is "Admission Date" with a date picker showing "6/13/2016". At the bottom of the window, there are four buttons: "Save", "Edit", "Clear", and "Close".

- a) Write the code segment for connecting above interface with the SQL Database.  
*Hint: Data Source=ATI(database name); Initial Catalog=StudentReg(table name);Integrated Security=True*  
(Indicate any relevant libraries/packages/etc., required to create the connection) [05 Marks]
- b) Write the code segment to save the information displayed on the form into the database.(Save Button)  
Assume that the database contains a table with the following structure:  
StudentReg (StNo, StFname, Age, Course, DoA) [05 Marks]
- c) Write the code segment to modify the course of a student who has already registered (Edit Button). [05 Marks]
- d) Write the code segment to view the record according to the given student number (Load Button). [05 Marks]