

**Higher National Diploma in Information Technology**  
**Second Year, First Semester Examination – 2016**  
**HNDIT2311- Rapid Application Development**

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**Instructions:**

Answer any five (05) questions only.  
All questions carry equal marks.

No. of questions : 06  
No. of pages : 05  
Time : Three (03) hours

**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.

i)

```
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]



- 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
```

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.

- 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]