EASTERN UNIVERSITY, SRI LANKA
DEPARTMENT OF MATHEMATICS
SECOND YEAR EXAMINATION IN SCIENCE - 2016/2017
FIRST SEMESTER (Oct. /Nov., 2018)
OC 207 – RAPID APPLICATION DEVELOPMENT

**Answer all questions**   **Time allowed: 02 hours**

1) Software development is an iterative logical process that aims to create a computer coded or programmed software to address a unique business or personal objective, goal or process.

   a) Briefly explain the characteristics associated with the conversion of a management need into an application system.

   b) Every software go through the Software Development Life Cycle (**SDLC**). Describe what is meant by the **SDLC**.

   c) A software process model is an abstract representation of a process. Discuss about this statement with the help of Software development life cycle phases.

   d) There are two types of **SDLC** Sequential development and Iterative development. Briefly describe the Iterative development with the aid of a flow diagram.

   e) Why the Waterfall model is inappropriate for large projects? How does the Spiral model overcome this limitation of the Waterfall model?

2) Rapid application development (**RAD**) describes a method of software development which heavily emphasizes rapid prototyping and iterative delivery.

   a) Instead of a strict set of requirements, developers create prototypes with different features and functions as fast as they can.

   i.   What is the main purpose of software prototyping?

   ii. Who needs to do software prototyping?

   b) Consider the Computer-Aided Software Engineering (CASE) tools.

   i.   Discuss the impacts of **CASE** tools in the system development life cycle.

   ii. State the important advantages and disadvantages of **CASE** Tools.

   c) What are the requirements for **RAD** and describe two of them.

d) Write short notes of the following **RAD** management techniques:

    i. Prototyping;   ii. Iteration;   iii. Time boxing.

e) What is Code Generator and explain how it works with the help of Facebook app or gma

3)

a) Describe each of the following terms in the context of **OOP**.

    i. Object

    ii. Class

b) Access modifiers can be used from code inside or outside the current application. State
   purpose of <u>four</u> access modifiers with suitable examples.

c) **OOP** is also a programming style which is associated with the concepts like Inheritan
   Encapsulation, Abstraction, Polymorphism.

    i. Briefly explain the Inheritance and Polymorphism with suitable examples.

    ii. Inheritance can be further classified into four types as illustrated in the below
        diagram. Describe any <u>three</u> of them.
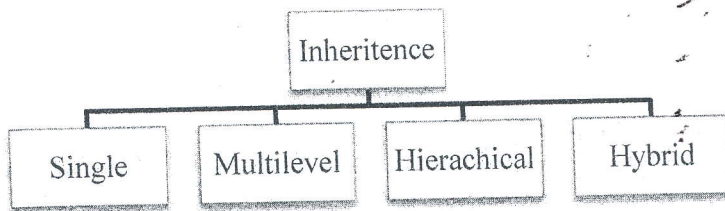
d) Write short notes of the following fundamental features of an Object-Orien
   programming:

    i. Constructors;

    ii. Method Overloading;

    iii. Method Overriding.

4) **VB.NET** is a multi-paradigm, object-oriented programming language, implemented
   the .NET Framework.

    a) State the fundamental rules regarding Visual Basic source code.

    b) Every variable must have a name that is unique within its scope.

        i. State four variable naming rules.

        ii. Give the syntax for Variable declaration in VB.Net with the suitable example.

    c) Explain briefly the following objects/properties, by stating their important properties a
       their uses:

i. ComboBox;

ii. MenuStrip;

iii. PasswordChar.

d) Output of the following program should be like 1,1,2,3,5... Find the errors and rewrite the entire corrected program.

```
Public Class Form1

Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Button1.Click
        Dim a As Integer
        Dim b As Integer = 0
        Dim i As String = 1

        For a = 1 To i
            ListBox1.Items.Add(a)
            If a = 1 Then ;
            a = a.+ b
                    ListBox1.Items.Add(b)
            End
        Next
    End Sub
End Class
```

e) Write the output of the following program?

```
Public Class Form1
    Private Sub Button1_Click(ByVal sender As System.Object,
        ByVal e As System.EventArgs) Handles Button1.Click
        Dim counter As Integer
            counter = 1
        While (counter <= 5)
                    MsgBox("Counter Now is : "  counter)
            counter = counter + 1
        End While
    End Sub
End Class
```