

University of Fort Hare  
*Together in Excellence*

## SUPPLEMENTARY EXAMINATIONS: JANUARY 2019

CSC 123F

### ELEMENTARY COMPUTER PROGRAMMING

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Time: 3 HOURS

Marks: 100

Internal Examiner

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Internal Moderator

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#### Instructions

- This paper consists of 6 pages including cover page
- There are Four(4) questions ,you have to answer all
- Take  $\pi = 3.1415$  where it has to be used

**QUESTION 1 [ 25 Marks]**

**1.1. Spot and correct errors from the following program codes**

- 1.1.1. Dim x, y z As Single (1)
- 1.1.2. ListBox.Add(x) (1)
- 1.1.3. If checkBox1 = true then (1)
- 1.1.4. Mid(1, str, 2) (1)
- 1.1.5. Format(Now "d") (1)

**1.2. Write down a one line code that will do the following:**

- 1.2.1. Create the graphics object for the form (1)
- 1.2.2. Draw a rectangle whose top left corner is at (5,5) , height = 200 and width = 100, using a pen called myPen (1)
- 1.2.3. Enables the Timer to stop (1)
- 1.2.4. Declares a two dimensional array, whose dimension are 2X3 to have 6 integers. (1)
- 1.2.5. Generate integers randomly between 1 and 20 (1)

**1.3. What is the output of the following VB codes:**

- 1.3.1. Dim x, y, z As Single  
x = 56  
y = 67  
z = x - y (3)  
y = z + 2  
TextBox1.Text = "The values of x, y, and z are:" & x & vbTab & y & vbTab & z

- 1.3.2. Dim y, i As Single  
y = 0  
For i = 1 To 45  
If i Mod 5 = 0 Then  
y = y + i  
End If  
Next  
TextBox1.Text = "The value of y is:" & y (3)

- 1.3.3. Dim str1, str2 As String  
Str1 = "Hello World"  
Str2 = "Hello"  
TextBox1.Text = Len(str1) \* Len(str2) - 2 \* InStr(1, str1, "World") (3)

- 1.3.4. Dim x As Single  
Dim y, z As Integer  
x = 23.1  
y = 45.9

```
z = x + y
TextBox1.Text = x & vbTab & y & vbTab & z
```

 (3)

```
1.3.5. Dim x, a, b As Single
Dim y, z As Integer
x = 13
y = 56
z = y - x
a = x Mod 2
b = y \ 5
TextBox1.Text = z & vbTab & a & vbTab & b
```

 (3)

**QUESTION 2** [25 marks]

2.1. Study the following function and answer questions that follow:

```
Public Function NumberOfZ(ByVal myNumber As String) As Single
    Dim k, count As Integer
    Count = 0
    For k=1 to Len(myNumber)
        If Mid(myNumber,k,1) = "e" Then
            Count + = 1
        End If
    Next k
    Return count
End Function
```

2.1.1. Given the above function called **NumberOfZ**, explain what the function does. (3)

2.1.2. Evaluate: **NumberOfZ ("Computerzsciences")**. (2)

2.2. Given the radius and height of a **cylinder**. Write a Visual Basic **function** that accepts two arguments **radius** and **height** to calculate its **volume** using a formula:

$$V = \pi r^2 h. \quad (4)$$

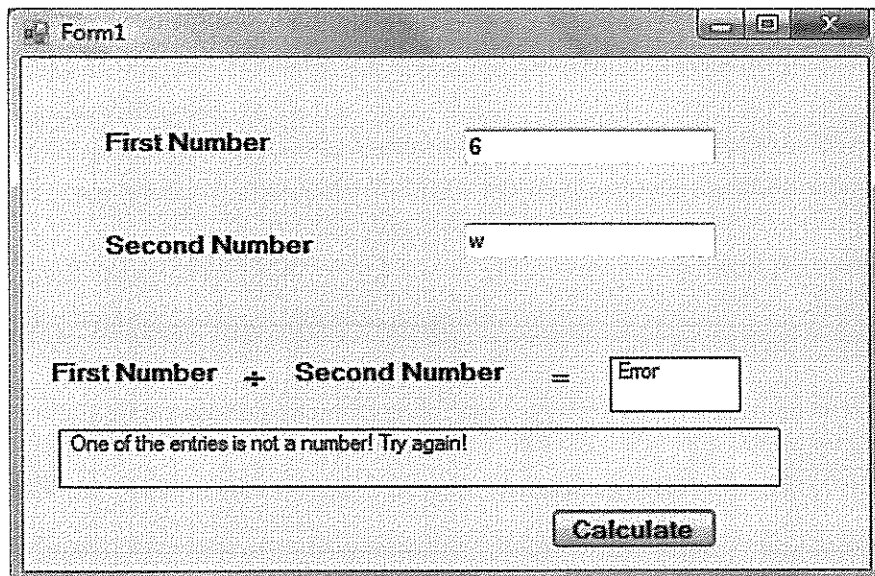
2.3. Write down a single line code that is used to navigate a web browser when an address is typed in the text box. (2)

2.4. What is the difference between:

2.4.1. **Combo box and List Box** (2)

2.4.2. **Radio button and Check Box** (2)

2.5. Write down a visual basic code that read two numbers from text boxes and find their quotient as indicated in the following application. Your program should handle any errors that might occur as indicated in the application below. The message "One of the entries is not a number! Try again" should set invisible if there is no error"



(10)

**QUESTION 3 [ 25 Marks]**

3.1. According to Pato a man should marry a woman whose age is half his age plus 7 years.

3.1.1. Write a VB 2010 function that returns the age of an ideal wife given the man's age. (3)

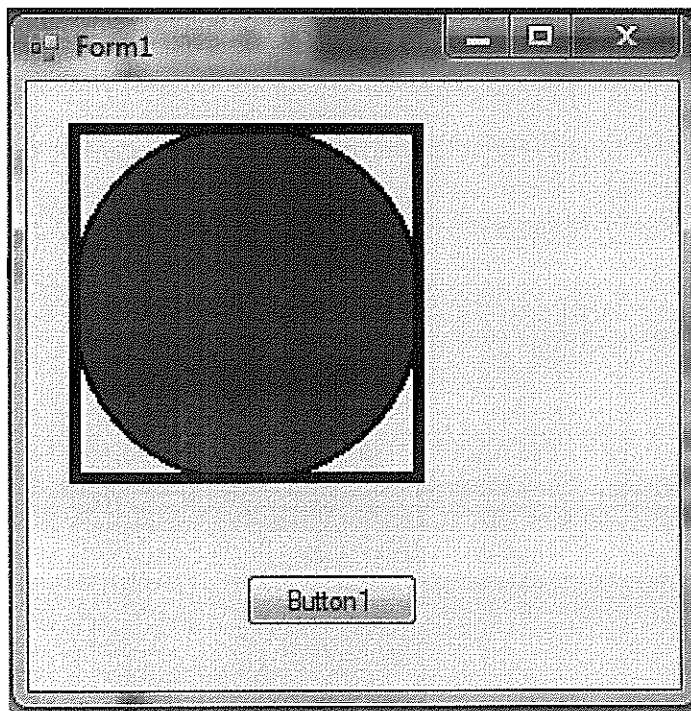
3.1.2. Write a calling procedure to the function Pato that accepts the man's age from text box and display the age of an ideal wife on a textbox. (3)

3.2. Write down a VB code that will draw for you a circle whose diameter = 100, and the top left corner of the containing rectangle is (20,20) (5)

3.3. Study the following VB code and briefly explain what this code does (4)

```
Dim myPen As Pen
Dim A As New Point(10, 10)
Dim B As New Point(100, 50)
Dim C As New Point(60, 150)
Dim myPoints As Point() = {A, B, C}
myPen = New Pen(Drawing.Color.Blue, 5)
Dim myGraphics As Graphics = Me.CreateGraphics
myGraphics.DrawPolygon (myPen, myPoints)
```

3.4 Write down a VB code that will draw a filled circle inside a rectangle whose top left corner is at (20 , 20) and has dimensions of 150X150 as illustrated in the figure below. The borders for both the circle and rectangle are blue, while the circle is filled with red.



(10)

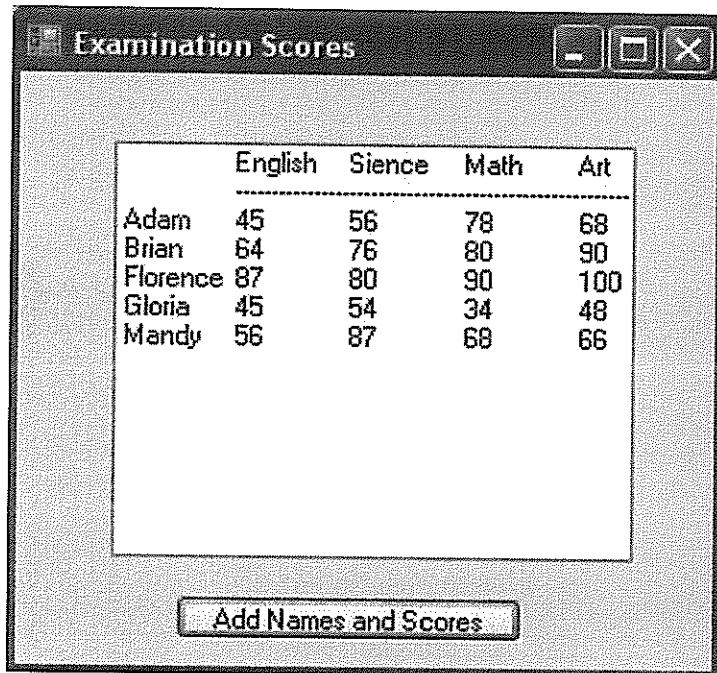
**QUESTION 4 [ 25 Marks]**

4.1. Write down a one line code that declares a two dimensional array of integers consisting of 3 rows and 4 columns (2)

4.2. How many items can be contained in the array declared below?

Dim list(12 To 30) As Single (2)

4.3. Write a code to manage student's examination scores as illustrated in the figure below. In this question, we want to key in the examination marks for five students and four subjects from input boxes.



(10)

4.4. One of the important controls in VB is a timer, what is it used for? (2)

4.5. We may use a timer to create a stop watch that has start, stop and reset buttons.

Write a code the reset button that will reset values in a label. (2)

4.6. A lucky seven slot machine allows a player to win the jackpot if three rows of 7 appear when the spin stopped. Write a code that will create a simple version of the lucky seven slot machines with only one row of numbers. (7)

**Grand Total = 100 Marks  
Good Luck**