

ICT3611 - May/June 2016

Question 1 - MCQ

- A - B
- B - C
- C - B
- D - B
- E - A
- F - C
- G - C
- H - C
- I - D
- J - A
- K - B
- L - D
- M - D
- N - A
- O - B

Question 2 - Error Handling

Not sure about this one, think there must be an if... else somewhere between line 4 and 8????

- [1] - As Integer
- [2] - Try
- [3] - summation
- [4] - Catch e As PositiveIntegerException
- [5] - Finally

Question 3 - Objects and Classes

- A
 - [1] - empid
 - [2] - As Double
 - [3] - empname
 - [4] - Property ReadOnly
 - [5] - return empmonthsalary
 - [6] - empmonthsalary = v

```

B    Public Class Developer
      Inherits Employee
      Public Overrides Function calcAnnualTax() As Double
        Dim annualAmount As Double
        Dim firstAmount As Double
        Dim secondAmount As Double
        annualAmount = empmonthsalary * 12
        If annualAmount < 100000 Then
          If annualAmount <= 50000 Then
            Return annualAmount * 0.1
          Else
            firstAmount = 50000
            secondAmount = annualAmount - firstAmount
            Return (firstAmount * 0.1) + (secondAmount * 0.05)
          End If
        ElseIf annualAmount >= 100000 And annualAmount < 200000 Then
          If annualAmount = 100000 Then
            Return annualAmount * 0.12
          Else
            firstAmount = 100000
            secondAmount = annualAmount - firstAmount
            Return (firstAmount * 0.12) + (secondAmount * 0.1)
          End If
        Else
          If annualAmount = 200000 Then
            Return annualAmount * 0.15
          Else
            firstAmount = 200000
            secondAmount = annualAmount - firstAmount
            Return (firstAmount * 0.15) + (secondAmount * 0.12)
          End If
        End If
      End Function
    End Class

```

As an alternative and a easier way cases can be used....

Class Developer

Inherits Employee

Public Overrides Function calcAnnualTax(empmonthsalary As Double) As Double

Dim annualAmount As Double

Dim tax As Double

annualAmount = empmonthsalary * 12

Select Case amount

Case Is < 100 000

tax = annualAmount * 0.1

Case 100 000 To 200 000

C The tax rate will be 12% because the employee does not earn less than 100 000 and not more than 200 000

Question 4 - Files and Data

A Structure Person

Dim surname As String

Dim initials as String

Dim age As Integer

End Structure

B [1] - Function

[2] - ByVal filename As String

[3] - List(of Person)

[4] - Dim strmrd As System.IO.StreamReader

[5] - System.IO.StreamReader(fileName)

[6] - strmrd.EndOfStream

[7] - strmrd.ReadLine()

[8] - surname

[9] - t.initials = dat(1)

[10] - t.age = dat(2)

[11] - strmrdr.close()

[12] - persons

Question 5 - Databases

A Data stored in a database consists of records which are made up of fields, in text-files data is also stored in records (one per line) and fields are normally separated with a special character.

B

- [1] - As SqlConnection
- [2] - SqlCommand(selectStatement, connection)
- [3] - selectCommand.Parameters.AddWithValue("@StockID", stockID)
- [4] - reader.Read
- [5] - reader("name").ToString()
- [6] - reader("description").ToString()
- [7] - reader("price").ToString()
- [8] - sitem = Nothing
- [9] - reader.Close()
- [10] - connection.Close()

Question 6 - Web-services

SOAP is a high-level protocol that relies on other protocols in order to exchange structured information between a requester and a service provider. It describes the request as well as the response using XML to define the content of the message. This means SOAP message can be easily extended, they are human readable, they allow for uses over multiple protocols (not only HTTP, although for web-services this is the most common protocol), and they are independent of programming language or model