COMP1022Q Review Questions Week 11

Q1)

Here is some VBA code for generating random numbers within a specific range.

```
Randomize
Range("A1").Value = Int(Rnd() * 100 + 10)
```

Instead of using `Rnd()`, the code has been changed to use `RandBetween()`. You need to fill in the blank in the following code so that the code works the same way as the code shown above.

```
Range("A1").Value = _
    WorksheetFunction.RandBetween( _____________________________________ )
```

Q2)

Here is some VBA code.

```
Sub Mystery()
    Dim X As Integer
    X = Range("A1").Value
    For Each Cell In Range("A2:A10")
        If Cell.Value < X Then
            X = Cell.Value
        End If
    Next
    MsgBox X
End Sub
```

You need to replace the content of `Mystery()` shown in the following page with a single line of VBA code that gives an equivalent result.

You can assume all associated cells contain integers.

```
Sub Mystery()


   MsgBox ____________________________________________________________
End Sub
```

Q3)

Part A)

The worksheet below shows the use of a custom function `FindN()` in cells B2, B3 and B4.

	A	B	C	D
1	**Index**	**Result**		**Names**
2	2	=FindN($D$2:$D$6, A2)		Ann
3	3	=FindN($D$2:$D$6, A3)		Dave
4	1	=FindN($D$2:$D$6, A4)		Sam
5				Henry
6				James
7				

You need to fill in the blanks in the custom function shown below so that it can be used as shown above.

```
Function FindN(ByVal MyCells As ________________ , _

                ByVal N       As ________________ )

    FindN = Cells(MyCells.Row + N - 1, MyCells.Column).Value
End Function
```

Part B)

What are the results of using the custom functions in cells B2, B3 and B4?

Answer: cell B2 is _____ ,

cell B3 is _____ and

cell B4 is _____

Q4)

A custom function `ABBREVIATION()`, which can make abbreviations of some input text, was introduced in the notes. The function assumes that there is only one single space between two consecutive words in the text.

In this question, the custom function is changed so that it can make correct abbreviations even if the text contains multiple spaces between words.

For example, both 'laugh out loud' (there is one space in between the words) and 'laugh out loud' (there are five spaces in between the words) can make the abbreviation 'LOL'.

You need to extend the If condition of the custom function in the following code so that it works as described above.

```
Function ABBREVIATION(InputText)
    Dim Pos As Integer

    ABBREVIATION = Left(InputText, 1)
    For Pos = 2 To Len(InputText)
        If Mid(InputText, Pos - 1, 1) = " " _


            ____________________________________________________ Then

            ABBREVIATION = ABBREVIATION & _
                           Mid(InputText, Pos, 1)
        End If
    Next Pos
    ABBREVIATION = UCase(ABBREVIATION)
End Function
```

Q5)

Which one of the following lines of code does not set the background colour of cell **A1** to red?

A) `Cells(1, 1).Interior.Color = vbRed`

B) `Cells(1, 1).Interior.Color = RGB(255, 0, 0)`

C) `Cells(1, 1).Interior.Color = 3`

Answer (A/B/C): _____

Q6)

Here is some VBA code.

```
Dim C As Long
C = 1113872
Range("A1").Interior.Color = _
    RGB(Int(C / 256 / 256), C / 256 Mod 256, C Mod 256)
```

Which one of the following colours is the background colour of cell **A1** after you run the above code? If you cannot find the colour, you need to choose the **closest** one.

A) Red
B) Green
C) Blue
D) Yellow
E) Cyan
F) Magenta
G) Black
H) White

Answer (A/B/C/D/E/F/G/H): _____

Answers to Week 11 Questions

Q1) The answer is WorksheetFunction.RandBetween(10, 1009).

The random number generated by the code is Int(Rnd() * 100 + 10). Rnd() * 100 gives you a number from 0 to 99.999999. Adding 10 becomes 10 to 109.999999. Finally, by applying Int() on the number, it becomes 10 to 109. Since RandBetween generates random number inclusively, the parameters are then 10 and 109.

Q2) The answer is WorksheetFunction.Min(Range("A1:A10")).

The value of X is first initialized as the value of cell A1. The for each loop then updates the content of X if any value of cells A2:A10 is smaller than X. Therefore, after running the loop, the value of X is the smallest value inside A1:A10. The cell formula function MIN() can find the minimum of the cells A1:A10 and hence the answer.

Q3) Part A. The answers are shown in bold below.

```
Function FindN(ByVal MyCells As _____Range______ , _
               ByVal N       As _____Integer_____ )
    FindN = Cells(MyCells.Row + N - 1, MyCells.Column).Value
End Function
```

(Some other possible answers would work, but the two answers shown above are the most sensible/appropriate answers).

Part B. The answers are shown in bold below.

cell B2 is _____**Dave**_____

cell B3 is _____**Sam**_____

cell B4 is _____**Ann**_____

Q4) The answer is shown in bold below.

```
Function ABBREVIATION(InputText)
    Dim Pos As Integer

    ABBREVIATION = Left(InputText, 1)
    For Pos = 2 To Len(InputText)
        If Mid(InputText, Pos - 1, 1) = " " _

            And Mid(InputText, Pos, 1) <> " "   Then

            ABBREVIATION = ABBREVIATION & _
                           Mid(InputText, Pos, 1)
        End If
    Next Pos
    ABBREVIATION = UCase(ABBREVIATION)
End Function
```

The idea is to find a space (the same as before), but this time to also check that the character following the space is *not* a space. In this way even if there are lots of spaces between words, only one of them will be considered - the last one.

Q5) The answer is C.

To change the colour using the colour index of 3 for red, the code needs to use the 'ColorIndex' value instead of 'Color'.

Q6) The answer is B.

The red component is Int(C / 256 / 256) = 16

The green component is C / 256 Mod 256 = 255

The blue component is C Mod 256 = 16

The colour is then RGB(16, 255, 16) and the closest colour to it is green.