

A



GCSE

COMPUTER SCIENCE

**Paper 1 Computational thinking and programming
skills – VB.Net**

8525/1C

INSERT

[Turn over]

FIGURE 1

```
1  i ← USERINPUT
2  IF i MOD 2 = 0 THEN
3      OUTPUT i * i
4  ELSE
5      OUTPUT i
6  ENDIF
```

FIGURE 2

```
1  Console.Write("Enter a number: ")
2  Dim i As Integer = Console.ReadLine()
3  If i Mod 2 = 0 Then
4      Console.WriteLine(i * i)
5  Else
6      Console.WriteLine(i)
7  End If
```

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[Turn over]

FIGURE 3

```
orderTotal ← USERINPUT
deliveryDistance ← USERINPUT
deliveryCost ← 0.0
messageOne ← "Minimum spend not met"
messageTwo ← "Delivery not possible"
IF deliveryDistance ≤ 5 AND orderTotal > 0.0 THEN
    IF orderTotal > 50.0 THEN
        deliveryCost ← 1.5
    OUTPUT deliveryCost
ELSE IF orderTotal > 25.0 THEN
    deliveryCost ← (orderTotal / 10) * 2
    OUTPUT deliveryCost
```

```
ELSE
    OUTPUT messageOne
ENDIF
ELSE
    OUTPUT messageTwo
ENDIF
```

[Turn over]

FIGURE 4

```
1 Dim charge As Integer = 0
2 Console.Write("Enter your car registration: ")
3 Dim carReg As String = Console.ReadLine()
4 While carReg.Length() > 8
5     Dim displayMessage As String = " is not valid"
6     Console.WriteLine(displayMessage)
7     carReg = Console.ReadLine()
8 End While
9 Console.Write("Enter your stay in hours: ")
10 Dim hours As Integer = Console.ReadLine()
11 If hours < 2 Then
12     charge = 0
13 Else
14     charge = hours * 2
```

15 End If

16 Console.WriteLine(charge)

[Turn over]

FIGURE 5

PROGRAM A
<pre>Console.WriteLine("Enter a number: ") Dim num As Integer = Console.ReadLine() Dim total As Integer = 0 For i = 1 To num total = total + i Next Console.WriteLine(total)</pre>

PROGRAM B

```
Console.WriteLine("Enter a number: ")
Dim num1 As Integer
num1 = Console.ReadLine()
Dim num2 As Integer = num1 + 1
num2 = num1 * num2
num2 = num2 \ 2
Console.WriteLine(num2)
```

[Turn over]

FIGURE 6

```
1 Dim numbers = New Integer() { 11,14,56,4,12,6,42,2 }
2 Dim count As Integer = 0
3 Dim r As Random = new Random()
4 While count < 10
5     count = count + 1
6     Dim number As Integer = r.Next(0, 8
7         Console.WriteLine(numbers(count))
8 End While
```

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[Turn over]

FIGURE 7

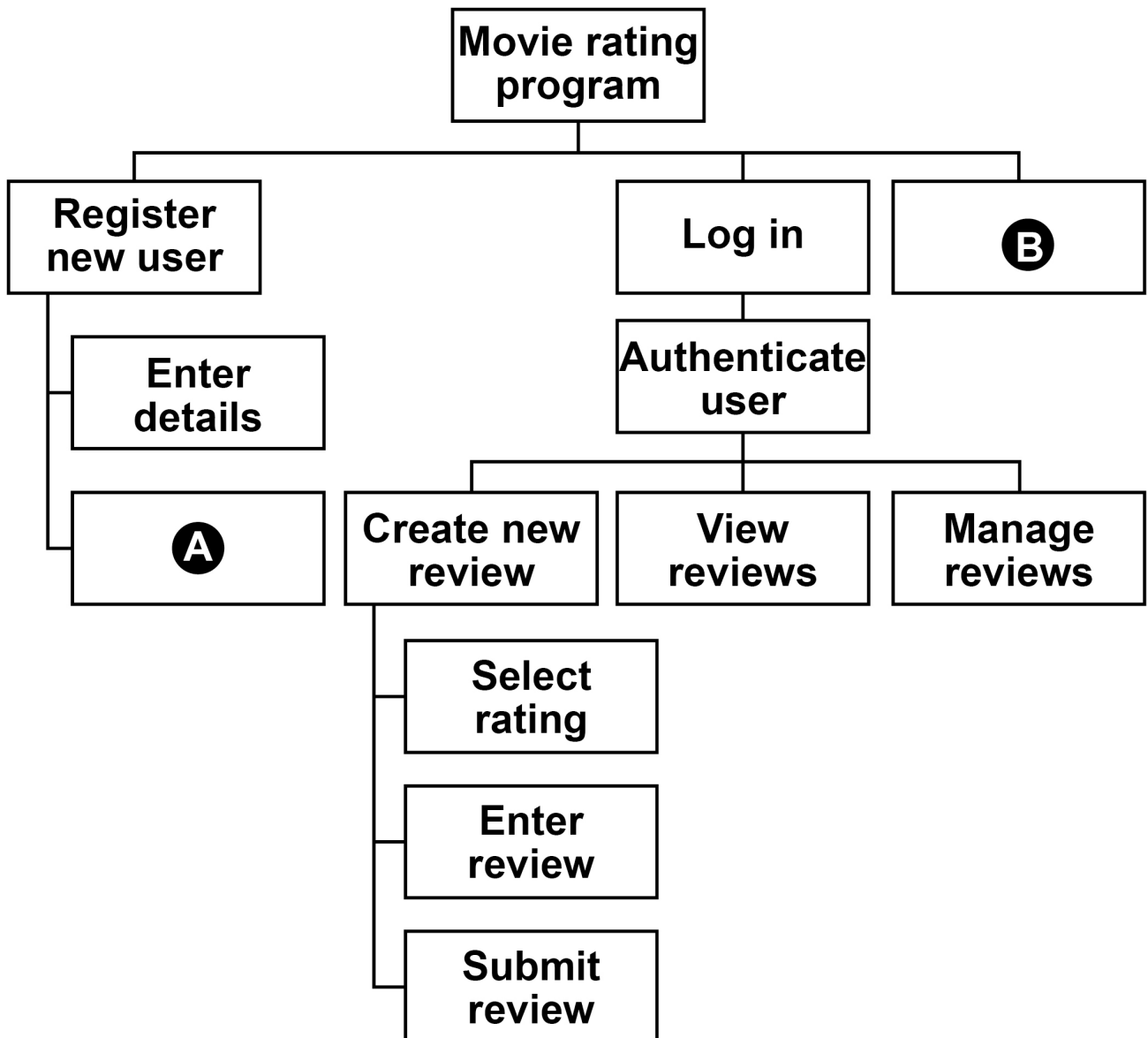


FIGURE 8

```
1  names ← ['Lily', 'Thomas']
2  name1 ← 'Sarah'
3  name2 ← 'Freddie'
4  OUTPUT name1[0]
5  OUTPUT LEN(names)
6  var ← SUBSTRING(0, 3, name1)
7  OUTPUT var
```

[Turn over]

FIGURE 9

```
SUBROUTINE calculate(n)
  a ← n
  b ← 0
  REPEAT
    a ← a DIV 2
    b ← b + 1
  UNTIL a ≤ 1
  OUTPUT b
ENDSUBROUTINE
```

FIGURE 10

```
SUBROUTINE calculate(n)
  a ← n
  b ← 0
  WHILE a > 1
    a ← a DIV 2
    b ← b + 1
  ENDWHILE
  OUTPUT b
ENDSUBROUTINE
```

[Turn over]

FIGURE 11

bit	byte	getSize	OUTPUT
rate	res	RETURN	sampRate
seconds	size	size + 8	size * 8
size / 8	size MOD 8	SUBROUTINE	USERINPUT

FIGURE 13

```
1  arr[0] ← 'c'
2  arr[1] ← 'b'
3  arr[2] ← 'a'
4  FOR i ← 0 TO 1
5      FOR j ← 0 TO 1
6          IF arr[j + 1] < arr[j] THEN
7              temp ← arr[j]
8              arr[j] ← arr[j + 1]
9              arr[j + 1] ← temp
10         ENDIF
11     ENDFOR
12 ENDFOR
```

[Turn over]

FIGURE 15

CPU	ALU	Pixel
NOT gate	Binary	LAN
Register	Cache	Protocol

FIGURE 17

	0	1	2
0	CPU	ALU	*
1	*	*	LAN
2	Register	Cache	*

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