

A



**GCSE**

**COMPUTER SCIENCE**

**Paper 1 Computational thinking and programming  
skills – C#**

**8525/1A**

**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 int i = Convert.ToInt32(Console.ReadLine());
3 if (i % 2 == 0) {
4     Console.WriteLine(i * i);
5 }
6 else {
7     Console.WriteLine(i);
8 }
```

3

**[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
```

5

**[Turn over]**

## FIGURE 4

```
1    int charge = 0;
2    Console.Write("Enter your car registration: ");
3    string carReg = Console.ReadLine();
4    while (carReg.Length > 8) {
5        string displayMessage = " is not valid";
6        Console.Write(displayMessage);
7        carReg = Console.ReadLine();
8    }
9    Console.Write("Enter your stay in hours: ");
10   int hours = Convert.ToInt32(Console.ReadLine());
11   if (hours < 2) {
12       charge = 0;
```

```
13    }  
14    else {  
15        charge = hours * 2;  
16    }  
17    Console.WriteLine(charge);
```

**[Turn over]**

**FIGURE 5**

**PROGRAM A**

```
Console.Write("Enter a number: ");  
int num = Convert.ToInt32(Console.ReadLine());  
int total = 0;  
for (int i = 1; i < num + 1; i++) {  
    total = total + i; }  
Console.WriteLine(total);
```



## PROGRAM B

```
Console.Write("Enter a number: ");  
int num1 = Convert.ToInt32(Console.ReadLine());  
int num2 = num1 + 1;  
num2 = num1 * num2;  
num2 = num2 / 2;  
Console.WriteLine(num2);
```

**[Turn over]**

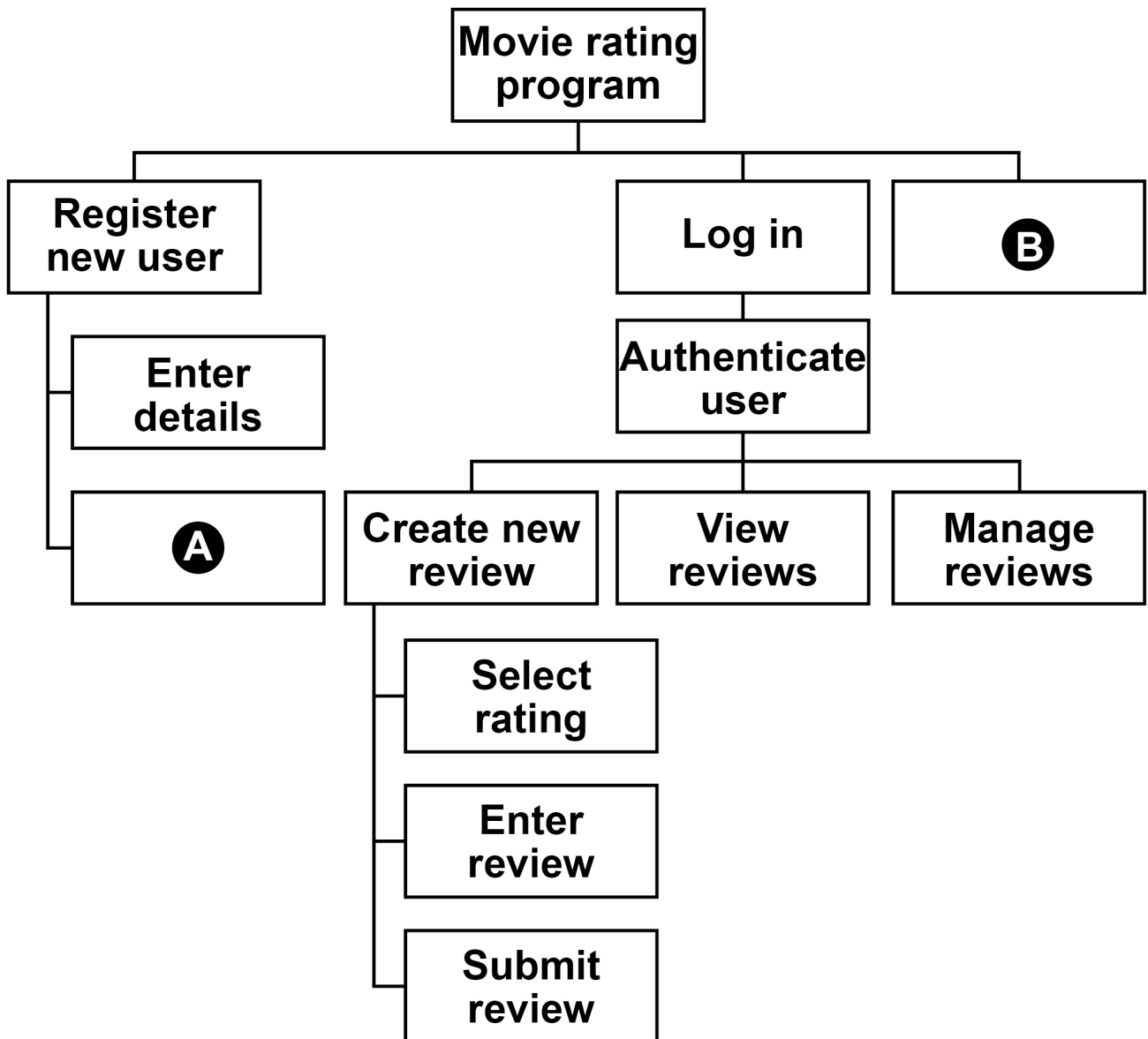
## FIGURE 6

```
1  int[] numbers = { 11, 14, 56, 4, 12, 6, 42, 2 };
2  int count = 0;
3  Random r = new Random();
4  while (count < 10) {
5      count = count + 1;
6      int number = r.Next(0, 8;
7      Console.WriteLine(numbers[count]);
8  }
```

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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

```

**FIGURE 15**

CPU	ALU	Pixel
NOT gate	Binary	LAN
Register	Cache	Protocol

**[Turn over]**

**FIGURE 17**

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

**END OF INSERT**

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