10. Sam is creating a program to calculate and display the total cost of laying new flooring. Flooring is charged at £15 per square meter and skirting boards are charged at £60 per room.

The total cost is calculated by multiplying the total floor area by 15, then adding the number of rooms requiring skirting multiplied by 60.

(a) Using the information above, design a user interface for the program. **3**

(b) (i) State the part of the processor that will perform the calculation once the program is implemented. **1**

(ii) State the part of the processor used to temporarily store the result of the calculation. **1**

10. (continued)

(c) Sam completes five jobs in July and earns the following.

£562.77, £675.44, £287.91, £245.22, £899.66

The following section of code calculates Sam's monthly earnings for July.

```
Line 1    DECLARE total INITIALLY 0.0
Line 2    DECLARE job1 INITIALLY 0.0
…
Line 7    RECEIVE job1 FROM KEYBOARD
Line 8    RECEIVE job2 FROM KEYBOARD
Line 9    RECEIVE job3 FROM KEYBOARD
Line 10   RECEIVE job4 FROM KEYBOARD
Line 11   RECEIVE job5 FROM KEYBOARD
Line 12   SET total TO = job1 + job2 + job3 + job4 + job5
Line 13   SEND "Total Monthly Earnings £" & total TO DISPLAY
…
```

When evaluating this code, it is found to be inefficient.

Using a programming language of your choice, re-write Lines 7 to 12 of the code using more efficient constructs. The values for the five jobs should remain stored for use after Line 12. **4**

10. (continued)

(d) Sam takes pictures of floor layouts using a tablet device.

(i) The images are stored as bit-mapped graphics.

Describe how a bit-mapped graphic would be stored. **2**

(ii) Describe one way that Sam could reduce the energy consumption of the tablet. **1**