Name: Class: Mark:

1. Draw a flowchart for a program which asks the user to enter a password. If the user enters “HiThere!” then print “Welcome”, and then end the program.

If they enter a different password, print “Wrong password” and end the program. [4]

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2. An algorithm is to be written which calculates the average of a set of student marks entered. If -1 is entered, then the program ends. The flowchart on the next page describes the steps in the algorithm. However, most of the stages have been omitted.

(a) Complete the flowchart, using the item number from the list of   
items given below. [6]

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| --- | --- |
| **Item number** | **Item description** |
| 1 | Is mark = -1? |
| 2 | INPUT "Enter next mark" |
| 3 | OUTPUT "No marks entered" |
| 4 | INPUT mark |
| 5 | count = count + 1 |
| 6 | OUTPUT average |
| 7 | total = 0 |
| 8 | Is count = 0? |
| 9 | total = total + mark |
| 10 | average = total / count |

No

End

No

Yes

Yes

INPUT mark

count = 0

Start

OUTPUT "Enter first mark"

(b) State the **three** types of basic programming constructs that have been used in the algorithm. [3]

(c) How many examples of iteration are there in the algorithm? [1]

(d) How many decision symbols are used in the algorithm? [1]

[Total 15 marks]