Name: Class: Mark:

1. An algorithm is given below.

1 array ID = [45, 33, 27, 88, 103, 66, 71]

2 numberSought = input("Please enter ID number to find")

3 found = False

4 n = ID.length

5 k = 0

6 while NOT found AND k < n

7 if numberSought == ID[k] then

8 found = True

9 endif

10 k = k + 1

11 endwhile

12 if found then

13 print("ID is in the list at index " + str(k – 1))

14 else

15 print("ID is not in the list")

16 endif

(a) What value is assigned to n at line 4? [1]

(b) What will be output if the user enters 88? [2]

(c) How many times will the loop be executed if the user enters 88? [1]

(d) What is the name of this algorithm? [1]

2. Sara is writing a program to input her monthly phone bills and output the month name and amount for each month along with the month that had the maximum cost.

She has defined an array to hold the month names.

Complete the pseudocode program. [6]

**// Program to output maximum month’s phone bill**

array monthName = ["January", "February", "March", "April", "May", "June", "July", "August", "September", "October", "November", "December"]

**// Define an array to hold the phone bills for each month**

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3. A two-dimensional array has been defined to hold the quantity of each of five different healthy snack products sold in a shop during the past three months.

The array is declared as follows:

sales = [ [0, 0, 0, 0, 0],

[0, 0, 0, 0, 0],

[0, 0, 0, 0, 0] ]

Indexing of the array starts at 0, so the sales of the first product in the second month is held in sales[1][0].

(a) Write a statement to assign the value 13 to the fifth product in the third month. [1]

(b) Complete the algorithm below to calculate and print the total sales for each   
product over the three month period in the format: [3]

Total for product 1: xx

Total for product 2: xx

etc

sales = [

[0,0,0,0,0],

[0,0,0,0,0],

[0,0,0,0,0]

]

totalsales = [0,0,0,0,0]

for product = 0 to 4

print("Sales for product " + str(product + 1))

for month = 0 to 2

sales[month,product] = input("Enter quantity for month " +   
 str(month + 1) + ": ")

**//insert code below**

|  |
| --- |
|  |

next month

next product

**//insert code below**

|  |
| --- |
|  |

[Total 15 marks]