

Questions



1 Examine the algorithm written in OCR ERL below:

```
weight = input("Please enter your weight in kilograms:")
height = input("Please enter your height in metres:")
bmi = weight / height / height

if bmi < 18.5 then
    description = "underweight"
elseif bmi < 25 then
    description = "healthy"
elseif bmi < 30 then
    description = "overweight"
else
    description = "obese"
endif
print("Your BMI is " + bmi + " which is " + description)
```



a) State the purpose of this algorithm.

[1]

b) Describe this algorithm in terms of its inputs, processing and outputs.

[5]

c) Draw a flow chart to represent this algorithm.

[7]



d) Complete the trace table below for this algorithm. You may not need to use all rows.

[2]

weight	height	bmi	description



2 Study the algorithm below:

```
p = 5
s = 2
do
    p = p + 3
    s = s * 2
until p > 20
t = p + s
print(p * s)
```



Complete the trace table for this algorithm. You may not need to use all rows or you may need to use more. [6]

p	s	t	OUTPUT



3 Complete the following algorithm so that it displays "Well done" if the answer is correct but will keep asking for the answer until the correct answer is given. [3]

```
1 print("Welcome to my quiz")
2 print("What does CPU stand for?")
3 print("1 Computer Processing Unit")
4 print("2 Central Processor Unit")
5 print("3 Central Processing Unit")
6 print("4 Computer Processor Unit")
7 answer = input("Please enter your answer:")
8 while
9     = input("Oops try again")
10 #endwhile
11 print( )
```



- 4 The following algorithm should ask the user how many names they would like to input. It should then ask for each name to be input and save the names to a list. Each name should be at least 2 characters long.

```

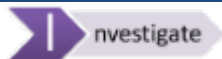
1  numbertnames = int(print("How many names do you want to
                           input? "))
2  mynames = [None] * 2
3  for i = 0 to numbertnames - 1
4      valid = True
5      while NOT valid
6          name = input("Please input name " + str(i+1) + ": ")
7          if len(name) <= 2:
8              print(Name must contain at least 2 characters)
9          else:
10             print("Name accepted")
11             myname[i] = name
12             valid = False
13         endfor
14     endwhile
15 next i

```



- a) Correct the 8 errors in the algorithm.

[8]



- b) Explain the purpose of `str(i+1)` in line 6, including why it uses `str` and `i+1`.(2)

- c) Explain what might go wrong if the error in line 2 was not corrected.

[2]