

PSEUDOCODE

(MAY/JUNE 2015)

Q 1 Read this section of program code that should input 10 positive numbers and then output the smallest number input.

```

1. Small = 0
2. Counter = 0
3. REPEAT
4.   INPUT Num
5.   IF Num < small THEN Num = small
6.   Counter = Counter + 1
7.   PRINT Small
8. UNTIL Counter < 10

```

There are **four** errors in this code.

Locate these errors and suggest a corrected piece of code for each error.

1.
 2.
 3.
 4.
-[4]

Q 2 Read this section of program code that should input 30 positive numbers and then output the largest number input.

```

1. Large = 9999
2. Counter = 0
3. WHILE Counter > 30
4. DO
5.   INPUT Num
6.   IF Num < Large THEN Large = Num
7.   Counter = Counter - 1
8. ENDWHILE
9. PRINT Large

```

There are four errors in this code.

Locate these errors and suggest a correct piece of code for each error.

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- [4]

Q 3

- a. Write an algorithm, using pseudocode and a FOR ... TO ... NEXT loop structure, to input 1000 numbers into an array.

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[2]

- b. Rewrite your algorithm using another loop structure.

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[4]

(MAY/JUNE 2016)

Q 4 Read this section of program code that inputs 10 numbers and then outputs the smallest number input.

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1. Small = 1000
2. Counter = 0
3. REPEAT
4. INPUT Num
5. IF Num < Small THEN Small = Num
6. Counter = Counter + 1
7. UNTIL Counter = 10
8. PRINT Small

```

a. Identify three changes you would need to make to find the largest number input instead of the smallest number.

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2.

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3.

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[3]

b. Rewrite the program code with your changes.

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..... [3]

Q 5 REPEAT...UNTIL is one type of loop structure.
Identify and describe two other types of loop structure that you could use when writing pseudocode.

Loop structure 1

Description

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Loop structure 2

Description

..... [4]

Q 6 Read this section of program code that inputs 10 positive numbers and then outputs the total.

```

1. Total = 0
2. Counter = 0
3. REPEAT
4.   INPUT Num
5.   Total = Total + Num
6.   PRINT Total
7.   Counter = Counter + 1
8. UNTIL Counter = 10

```

This code works, but it is inefficient.

a. Suggest **three** improvements that could be made.

1.

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2.
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3. [3]
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b. Rewrite the program code with your improvements.

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Q 7 A programmer writes a program to store a patient's temperature every hour for a day.
State the data structure that would be most suitable to use and give the reason for your choice.

Data structure

Reason

..... [2]

Q 8 Identify **two** different selection statements that you can use when writing pseudocode.

1.
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2. [2]
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(Oct/Nov 2016)

Q 9 Read this section of program code that inputs positive numbers discards any negative numbers and then outputs the average. An input of zero ends the process.

```

1. Total = 0
2. Counter = 100
3. REPEAT
4.     REPEAT
5.         INPUT Num
6.         UNTIL Num<0
7.         Total = Total + 1
8.         Counter = Counter + Num
9.     UNTIL Num=0
10. Average = Total / (Counter - 1)
11. Print Average

```

There are four errors in this code.

Locate these errors and suggest a correction to remove each error.

- Error 1
Correction
- Error 2
Correction
- Error 3
Correction
- Error 4

Correction
..... [8]

Q 10 IF...THEN...ELSE...ENDIF and CASE...OF...OTHERWISE...ENDCASE are two different conditional statements that you can use when writing pseudocode. Explain, using examples, why you would choose to use each conditional statement.

Example 1.....
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Reason of choice.....
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..... [6]

Q 11 Read this section of program code that:
✓ Input 10 numbers
✓ Checks whether each number is within a specified range.
✓ Totals the numbers within range and outside the range.

```
1. InRange = 0
2. OutRange = 1000
3. FOR Count = 1 TO 10
```

```

4.   INPUT Num
5.   IF Num>10 AND Num < 20 THEN InRange = InRange + 1
6.   ELSE OutRange = OutRange - 1
7. Count = Count + 1
8. NEXT X
9. PRINT InRange, OutRange
    
```

a. There are four errors in this code.

Locate these errors and suggest a correction to remove each error.

Error 1

Correction

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Error 2

Correction

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Error 3

Correction

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Error 4

Correction.....

..... [4]

b. Decide, with reasons, whether the numbers 10 and 20 are within or outside the range.

Number	Within range ✓	Outside range ✓	Reason
10		
20		

[4]

Q 12 REPEAT ...UNTIL and WHILE...Do...ENDWHILE are two different loop structures you can use when writing pseudocode. **(Oct/Nov 2016)**

Explain, using examples, why you would become choose to use each type of loop.

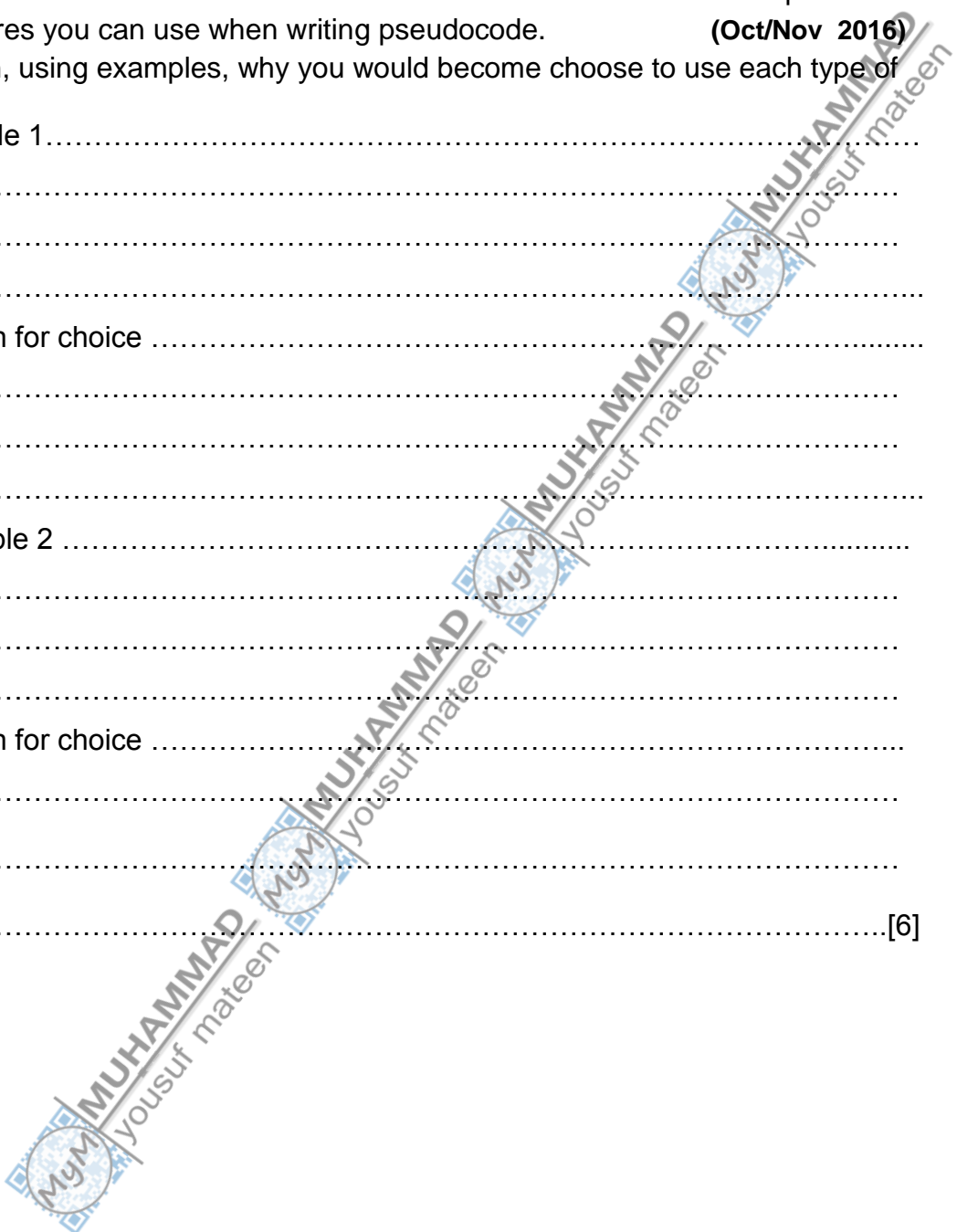
Example 1.....
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Reason for choice
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Example 2
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Reason for choice
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.....

[6]



(MAY/JUNE 2017)

Q 13 This section of program code asks for 50 numbers to be entered. The total and average of the numbers are calculated.

```

1. Total = 0
2. Counter = 0
3. PRINT 'When prompted, enter 50 numbers, one at a time '
4. REPEAT
5.   PRINT 'Enter a number'
6.   INPUT Number
7.   Total + Number = Total
8.   Number = Number + 1
9. UNTIL Counter = 50
10. Average = Number * Counter
11. PRINT 'The average of the numbers you entered is',Average

```

a. There are four errors in the code.

State the line number for each error and write the code for that line.

Error 1 Line number
Correct Code.....

Error 2 Line number
Correct Code

Error 3 Line number
Correct Code

Error 4 Line number
Correct Code [4]

b. Describe the purpose of each statement in the algorithm.

```

FOR I ← 1 TO 300
INPUT Name[I]
NEXT I

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..... [4]

Q 16 An algorithm has been written in pseudocode to input 100 numbers and print out the sum. A REPEAT...UNTIL loop has been used.

1. Count \leftarrow 0
2. Sum \leftarrow 0
3. REPEAT
4. INPUT Number
5. Sum \leftarrow Sum + Number
6. Count \leftarrow Count + 1
7. UNTIL Count > 100
8. PRINT sum

a. Find the error in the pseudocode and suggest a correction.

Error.....
Correction.....
..... [2]

b. Rewrite the correct algorithm using a more suitable loop structure.

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