

Quiz #4

Due Dec 8 at 11:59pm

Points 50

Questions 10

Available Dec 5 at 12am - Dec 8 at 11:59pm 4 days

Time Limit 60 Minutes

Instructions

You have 60 minutes to complete this quiz. Once you begin the quiz you must complete it in one session.

For this quiz, you are allowed to refer to your notes/textbook, as well as use any calculator.

Items that you should review prior to taking Quiz #4:

- the LENGTHOF/SIZEOF directives
- macros
- postfix notation
- infix notation
- the lodsb instruction
- digital logic diagrams/truth tables

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	43 minutes	50 out of 50

Score for this quiz: **50** out of 50

Submitted Dec 7 at 5:28am

This attempt took 43 minutes.

Question 1

5 / 5 pts

Suppose that you are given the following MASM data segment declaration:

```
.data
matrix      WORD      12 DUP(7 DUP(?))
```

Assume that the base address of matrix is 0xAB00

What is `LENGTHOF matrix` (in decimal)?

84

What is `SIZEOF matrix` (in decimal)?

168

What is the hexadecimal address of `matrix[3][5]` ?

AB34

Answer 1:

Correct!

84

Answer 2:

Correct!

168

Answer 3:

Correct!

AB34

Incorrect Answer

xAB34

Incorrect Answer

0xAB34

Incorrect Answer

AB34h

Incorrect Answer

hAB34

Incorrect Answer

0hAB34

Question 2

5 / 5 pts

Given the macro definition and global declarations shown in the image below, provide answers to the following questions:

A. After the statement "**quiz4 x,4**" executes, **x** contains

243

B. The statement "**quiz4 6,4**" will produce an error when the macro is invoked. (Enter **true** or **false**)

true

C. Suppose that the following code executes:

```
mov    ebx, 3
mov    ecx, 12
mov    edx, ecx
quiz4  ecx, ebx
```

Upon completion, **edx** will contain

0

Hint: Think carefully, part C may be more difficult than it seems.

```
quiz4  MACRO p,q
        LOCAL here
        push    eax
        push    ecx
        mov     eax, p
        mov     ecx, q
here:
        mul     P
        loop    here

        mov     p, eax
        pop     ecx
        pop     eax
ENDM
.data
x       DWORD 3
y       DWORD 3
```

Answer 1:

Correct!

243

Answer 2:

Correct!

true

Correct Answer

t

Answer 3:

Correct!

0

Correct Answer

0.0

Nice work!

Question 3**5 / 5 pts**

Which of the following postfix expressions corresponds to the given infix expression?

$$(13 + 14 - 3 + 2) / 2 ^ 3$$

☐ 13 14 + 3 - 2 + 2 3 / ^

☐ 13 14 + 3 2 + - 2 3 ^ /

☐ 13 14 + 3 2 - + 2 3 ^ /

Correct!

☒ 13 14 + 3 - 2 + 2 3 ^ /

Question 4**5 / 5 pts**

Which of the following infix expressions corresponds to the given postfix expression?

$$3 \ 5 \ 4 \ 2 \ 3 \ 6 \ / \ * \ - \ ^ \ +$$

☐ $(3 + 5) ^ (4 - 2 * 3 / 6)$

☐ $3 + 5 ^ 4 - 2 * 3 / 6$

☐ $3 / 5 * (4 - 2 ^ 3 + 6)$

Correct!

☒ $3 + 5 ^ (4 - 2 * 3 / 6)$

Question 5**5 / 5 pts**

Evaluate the following postfix expression: (Give answer rounded to the nearest integer value)

3 7 5 * - 1 / 8 2 - +

Correct!

-26

Correct Answer

-26

Question 6

5 / 5 pts

Given the following MASM code snippet, what is output to the screen?

```
.data
str1    BYTE    "Introduction",0
.code
...
mov     esi, OFFSET str1
add     esi, 5
mov     ecx, 4
cld
more1:
lodsb
call    WriteChar
loop    more1

mov     ecx, 4
std
more2:
lodsb
call    WriteChar
loop    more2
...
```

Correct!

ductitcu

Correct Answers

ductitcu

'ductitcu'

Question 7

5 / 5 pts

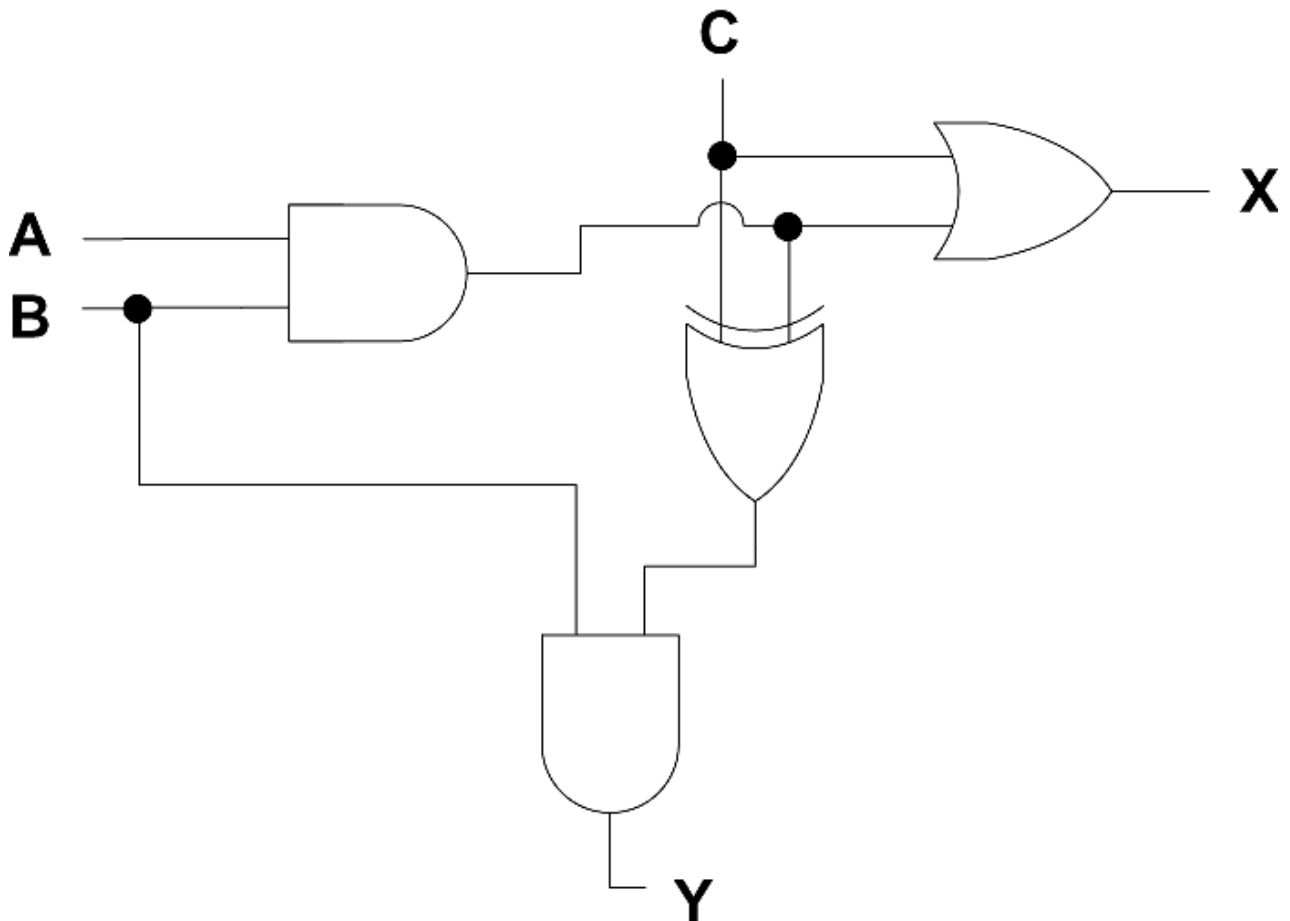
The logic diagram shown below should be used to answer questions 7-10.

Consider the following story problem and select either true or false.

Sandy wants to implement the logic circuit shown in the diagram below.

Sandy has OR gates, NOT gates, & AND gates in her box of spare parts but there are no XOR gates available. Fortunately, Sandy took a basic boolean algebra class in college and she remembers that it's possible to create an XOR gate by using a combination of other gates. Can Sandy implement the circuit using only the gates that she has available?

Select true if the answer is yes and false if the answer is no.



Correct!

☒ True

☐ False

Question 8

5 / 5 pts

Which of the following Boolean functions correctly represents the X output of the circuit shown in problem 7?

☐ $X = A + B + C$

☐ $X = A + BC$

☐ none of these**Correct!**

☒ $X = AB + C$

Question 9

5 / 5 pts

Which of the following Boolean functions correctly represents the Y output of the circuit shown in problem 7?

Correct!

☒ $Y = B(C \oplus AB)$

☐ $Y = B + C(A \oplus B)$

☐ none of these

☐ $Y = (A \oplus B) + C$

Question 10

5 / 5 pts

Please complete the following truth table (corresponding to the circuit diagram shown in problem 7).

A	B	C	X	Y
0	0	0	[Select] ▼	[Select] ▼
0	0	1	[Select] ▼	[Select] ▼
0	1	0	[Select] ▼	[Select] ▼
0	1	1	[Select] ▼	[Select] ▼
1	0	0	[Select] ▼	[Select] ▼
1	0	1	[Select] ▼	[Select] ▼
1	1	0	[Select] ▼	[Select] ▼
1	1	1	[Select] ▼	[Select] ▼

Answer 1:

Correct!

0

Answer 2:

Correct!

0

Answer 3:

Correct!

1

Answer 4:

Correct!

0

Answer 5:

Correct!

0

Answer 6:

Correct!

0

Answer 7:

Correct!

1

Answer 8:

Correct!

1

Answer 9:

Correct!

0

Answer 10:

Correct!

0

Answer 11:

Correct!

1

Answer 12:

Correct!

0

Answer 13:

Correct!

1

Answer 14:

Correct!

1

Answer 15:

Correct!

1

Answer 16:

Correct!

0

Quiz Score: **50** out of 50