Midterm 1

Due Sep 30, 2021 at 11:59pm **Points** 100 **Questions** 31
Available Sep 29, 2021 at 11:59pm - Oct 19, 2021 at 11:59pm
Time Limit 75 Minutes

Instructions

Hi everyone,

We have the first online midterm exam for this course. It will be available on Canvas from 11:59 pm Sep. 29th to 11:59 pm Sep. 30th (24 hours, U.S. Central Time), so you can take it anytime during this period but as early as possible to avoid any potential issues (e.g., internet access). Moreover, we have 75 minutes with only ONE attempt to complete and turn in our answers, so please make sure you complete all questions before submitting them. If there are any problems, please feel free to let me know by email!

Good luck!

Your TAs

This quiz is no longer available as the course has been concluded.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	49 minutes	97 out of 100

Correct answers are no longer available.

Score for this quiz: **97** out of 100
Submitted Sep 30, 2021 at 1:32pm
This attempt took 49 minutes.

Question 1 — 3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

sign-magnitude of -25:

1001 1001

Question 2

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

one’s complement of -25:

1110 0110

Question 3

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

two’s complement of -25:

1110 0111

Question 4

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

sign-magnitude of -1:

1000 0001

Question 5

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

one’s complement of -1:

1111 1110

Question 6

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

two’s complement of -1:

1111 1111

Question 7

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

sign-magnitude of +1:

0000 0001

Question 8

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

one’s complement of +1:

0000 0001

Question 9

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

two’s complement of +1:

0000 0001

Question 10

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

sign-magnitude of +0:

0000 0000

Question 11

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

one’s complement of +0:

0000 0000

Question 12

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

two’s complement of +0:

0000 0000

Question 13

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

sign-magnitude of -0:

1000 0000

Question 14

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

one’s complement of -0:

1111 1111

Question 15

3 / 3 pts

Using 8-bit numbers, present all bits in the format of sign-magnitude(s_m), one’s complement, and two’s complement for the following decimal numbers.

two’s complement of -0:

0000 0000

Question 16

8 / 8 pts

Please calculate the value of 1-1 (decimal numbers) in the format of sign-magnitude(s_m), one’s complement, and two’s complement.

Please answer in 8-bits binaries. (in the format of XXXX XXXX - XXXX XXXX = XXXX XXXX)

sign-magnitude(s_m):

1-1 = ?

Your Answer:

1 + (-1)

0000 0001 + 1000 0001 = 1000 0010

Question 17

8 / 8 pts

Please calculate the value of 1-1 (decimal numbers) in the format of sign-magnitude(s_m), one’s complement, and two’s complement.

Please answer in 8-bits binaries. (in the format of XXXX XXXX - XXXX XXXX = XXXX XXXX)

one’s complement(1s):

1-1 = ?

Your Answer:

0000 0001 + 1111 1110 = 1111 1111

Question 18

8 / 8 pts

Please calculate the value of 1-1 (decimal numbers) in the format of sign-magnitude(s_m), one's complement, and two's complement.

Please answer in 8-bits binaries. (in the format of XXXX XXXX - XXXX XXXX = XXXX XXXX)

two's complement(2s):

1-1 = ?

Your Answer:

0000 0001 + 1111 1111 = 0000 0000

Question 19

2 / 2 pts

What is the value (in binary) of AL, AH, and EAX given the following hexadecimal values in the EAX register?

(1) 37E11449

AL=? (in the format of XXXX XXXX)

0100 1001

Question 20

2 / 2 pts

What is the value (in binary) of AL, AH, and EAX given the following hexadecimal values in the EAX register?

(1) 37E11449

AH =? (in the format of XXXX XXXX)

0001 0100

Question 21

2 / 2 pts

What is the value (in binary) of AL, AH, and EAX gave the following hexadecimal values in the EAX register?

(1) 37E11449

EAX =? (in the format of XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX)

0011 0111 1110 0001 0001 0100 0100 1001

Question 22

2 / 2 pts

What is the value (in binary) of AL, AH, and EAX given the following hexadecimal values in the EAX register?

(1) 8A29713D

AL=? (in the format of XXXX XXXX)

0011 1101

Question 23

2 / 2 pts

What is the value (in binary) of AL, AH, and EAX given the following hexadecimal values in the EAX register?

(1) 8A29713D

AH=? (in the format of XXXX XXXX)

0111 0001

Question 24

2 / 2 pts

What is the value (in binary) of AL, AH, and EAX given the following hexadecimal values in the EAX register?

(1) 8A29713D

EAX=? (in the format of XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX)

1000 1010 0010 1001 0111 0001 0011 1101

Question 25

2 / 2 pts

Please implement the following lines.

```
.386
.model flat,stdcall
.stack 4096
ExitProcess proto, dwExitCode:dword

.code
main proc
_______?_______;  Set the value of EAX to the hexadecimal value F00D
_________________;  Add BEEF to EAX

invoke ExitProcess, 0
main endp
end main
```

please complete the first line with ?:

mov eax, 0F00Dh

Question 26

2 / 2 pts

Please implement the following lines.

```
.386
.model flat,stdcall
```

```
.stack 4096
ExitProcess proto, dwExitCode:dword

.code
main proc
_________________;  Set the value of EAX to the hexadecimal value F00D
_______?_______;  Add BEEF to EAX

invoke ExitProcess, 0
main endp
end main
```

please complete the second line with ?:

```
add eax, 0BEEFh
```

Incorrect

Question 27

0 / 3 pts

```
.386
.model flat,stdcall
.stack 4096
ExitProcess proto, dwExitCode:dword

.code
main proc
_________________;  Set the value of EAX to the hexadecimal value F00D
_________________;  Subtract BEEF from EAX

invoke ExitProcess, 0
main endp
end main
```

What is the value of EAX after these two operations? (in the format of XXXX XXXX)

0011 0001 0001 1110

Incorrect

Question 28

3 / 3 pts

Write a program that rearranges the values of three double word values in the following array as 3, 1, 2.

Definition:

.386

.model flat, stdcall

.stack 4096

ExitProcess proto, dwExitCode:word

.data

array DWORD 1, 2, 3

.code

main proc

_____?_____; copy the first value into EAX

_____; exchange EAX with the value in the second position

_____; exchange EAX with the value in the third position

_____; copy the value in EAX to the first position of the array

invoke ExitProcess,0

main endp

end main

Please finish the first line with ?:

mov eax, [array]

Question 29

3 / 3 pts

Write a program that rearranges the values of three double word values in the following array as 3, 1, 2.

Definition:

.386

.model flat, stdcall

.stack 4096

ExitProcess proto, dwExitCode:word

.data

array DWORD 1, 2, 3

.code

main proc

_____; copy the first value into EAX

_____?_____; exchange EAX with the value in the second position

_____; exchange EAX with the value in the third position

_____; copy the value in EAX to the first position of the array

invoke ExitProcess,0

main endp

end main

Please finish the second line with ?:

```
xchg eax, [array + 4]
```

Question 30

3 / 3 pts

Write a program that rearranges the values of three double word values in the following array as 3, 1, 2.

Definition:

.386

.model flat, stdcall

.stack 4096

ExitProcess proto, dwExitCode:word

.data

array DWORD 1, 2, 3

.code

main proc

_____; copy the first value into EAX

_____; exchange EAX with the value in the second position

_____?_____; exchange EAX with the value in the third position

_____; copy the value in EAX to the first position of the array

invoke ExitProcess,0

main endp

end main

Please finish the third line with ?:

```
xchg eax, [array + 8]
```

Incorrect

Question 31

3 / 3 pts

Write a program that rearranges the values of three double word values in the following array as 3, 1, 2.

Definition:

.386

.model flat, stdcall

.stack 4096

ExitProcess proto, dwExitCode:word

.data

array DWORD 1, 2, 3

.code

main proc

_____; copy the first value into EAX

_____; exchange EAX with the value in the second position

_____; exchange EAX with the value in the third position

_____?_____; copy the value in EAX to the first position of the array

invoke ExitProcess,0

main endp

end main

Please finish the fourth line with ?:

```
mov [array], eax
```

Quiz Score: **97** out of 100