

List the three primary steps of the instruction execution cycle, in sequential order (even if some are missing).

- ☐ fetch, memory read, execute
- ☐ fetch, decode, memory write
- ☐ decode, fetch, execute
- ☒ fetch, decode, execute

Convert the following binary number into a signed decimal value.

1111 0000 0001 1001

-4071.0000

After the following MASM code is executed:

```
mov     eax, 57
mov     ebx, 50
mov     ecx, 50
add     eax, ebx
sub     eax, ecx
```

What is the value in the eax register (in decimal)?

57

What is the value in the ebx register (in decimal)?

50

What is the value in the ecx register (in decimal)?

50

Suppose that result is declared as DWORD, and the following MASM code is executed:

```
mov     eax, 0
mov     ebx, 2
mov     ecx, 6
label5:
add     eax, ebx
add     ebx, 2
loop    label5
mov     result, eax
```

What is the value stored in the memory location named result?

42.0000

After the following MASM code is executed:

```
mov     eax, 212
mov     ebx, 19
mov     edx, 0
div     ebx
```

What is the value in the eax register (in decimal)?

11

What is the value in the ebx register (in decimal)?

19

What is the value in the edx register (in decimal)?

3

After the following code has finished execution, ECX contains the initial contents of which register?

```
mov edx, eax
mov ebx, ecx
mov ebx, edx
mov ecx, ebx
mov edx, eax
```

- ☐ EDX
- ☐ ECX
- ☒ EAX
- ☐ EBX

Convert the following ASCII hex representation into its string.

The hex 31 2B 7A is the string 1+z

4D 65 6D 6F 72 79

Memory

Which of the following is **NOT** a valid MOV operation? Table 4-1 might be helpful. (check any/all that apply)

- ☐ MOV reg,reg
- ☐ MOV reg,mem
- ☒ MOV imm,imm
- ☐ MOV mem,reg
- ☒ MOV imm,mem

- ☒ MOV mem,mem
- ☐ MOV mem,imm
- ☐ MOV reg,imm

Which of the following are valid uses of the XCHG instruction? (check any/all that apply)

- ☐ XCHG reg,imm
- ☒ XCHG mem,reg
- ☐ XCHG imm,imm
- ☒ XCHG reg,reg
- ☐ XCHG imm,reg
- ☐ XCHG imm,reg
- ☒ XCHG reg,mem
- ☐ XCHG mem,mem

The following instructions will set the Sign flag:

```
mov al,0FEh
sub al,2
```

- ☒ True
- ☐ False

Mechanically speaking, the CALL instruction pushes its return address on the stack and copies the called procedure's address into the instruction pointer.

- ☒ True
- ☐ False

The _____ procedure advances the cursor to the beginning of the next line in the console window.

CrLf

Which register contains an integer before calling WriteDec?

- ☒ EAX
- ☐ EDX
- ☐ ECX
- ☐ EBX
- ☐ EWD
- ☐ EXA

Given the following MASM code using Irvine's library:

```
mov     eax,1
mov     ebx,4
label6:
mul     ebx
call    WriteDec
call    CrLf
inc     ebx
cmp     eax,40
jbe     label6
mov     eax,ebx
call    WriteDec
call    CrLf
```

What number is printed on the second line of the output? (Ignore the .0000 that Canvas puts in there)

Given the following MASM code using Irvine's library:

```
mov     eax,1
mov     ebx,4
label6:
mul     ebx
call    WriteDec
```

```
call    CrLf
inc     ebx
cmp     eax,40
jbe     label6
mov     eax,ebx
call    WriteDec
call    CrLf
```

What number is printed on the third line of the output? (Ignore the .0000 that Canvas puts in there)