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CS 218 - Worksheet 4

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← Encode last 5 of NSHE ID

Enter Name: First Last
Chayden Richardson

For each of the following questions, select only the best answer.

Question 1 Given the following code fragment, what is in the **eax** and **edx** registers?

```
mov     eax, 11
cdq
mov     ebx, 4
idiv    ebx
```

- ☐ eax = 0x00000003 and edx = 0x00000000
- ☐ eax = 0x00000003 and edx = 0x00000001
- ☐ eax = 0x00000002 and edx = 0x00000000
- ■ eax = 0x00000002 and edx = 0x00000003 -

Question 2 What function does each of the following instructions perform.

```
mov   rax, var
mov   rax, qword [var]
```

- ■ The first accesses the address and the second access the value. -
- ☐ The first accesses the value and the second access the address.
- ☐ They both access the value.
- ☐ They both access the address.

Question 3 Given the following code fragment, what is in the **ebx** register?

```
ans1    dd    7

mov     eax, 3
mov     rbx, ans1
add     eax, dword [rbx]
```

- ■ eax = 0x0000000a
- ☐ eax = 0x00000009
- ☐ eax = 0x0000000b
- ☐ eax = 0x00000010

Question 4 Given the following code fragment, what is in the **eax** and **edx** registers?

```
list1   dd   2, 3, 4, 5, 6, 7

mov     rbx, list1
add     rbx, 4
mov     eax, dword [rbx]
mov     edx, dword [list1]
```

- ■ eax = 0x00000003 and edx = 0x00000002 -
- ☐ eax = 0x00000002 and edx = 0x00000003
- ☐ eax = 0x00000002 and edx = 0x00000002
- ☐ eax = 0x00000006 and edx = 0x00000002

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Question 5 Given the following code fragment, what is in the **eax** and **ebx** registers?

```
        lst   dd   2, 3, 5, 7, 9

        mov    rsi, 4
        mov    eax, 1
        mov    rcx, 2
lp:     add    eax, dword [lst+rsi]
        add    rsi, 4
        loop   lp
        mov    ebx, dword [lst]
```

eax:1 4 9
rcx: 2 x 0
rsi: 4 8 12

☐ eax = 0x0000000b and ebx = 0x00000009

Note, the instruction: loop lp is the same as:

```
dec   rcx
cmp   rcx, 0
jne   lp
```

☐ eax = 0x0000000a and ebx = 0x00000007
■ eax = 0x00000009 and ebx = 0x00000002 -
☐ eax = 0x00000008 and ebx = 0x00000002

Addressing Modes
What is the address mode of the source operand for each of the following instructions (Register, Immediate, Memory, or Illegal instruction).

Question 6 mov ebx, 14

☐ Regsiter
■ Immediate -
☐ Memory
☐ Illegal

Question 7 mov ecx, dword [rbx]

☐ Regsiter
☐ Immediate
■ Memory
☐ Illegal

Question 8 mov byte [rbx+4], 10

☐ Regsiter
■ Immediate -
☐ Memory
☐ Illegal

Question 9 mov 10, rcx

☐ Regsiter
☐ Immediate
☐ Memory
■ Illegal -

Question 10 mov dl, ah

■ Regsiter
☐ Immediate
☐ Memory
☐ Illegal -

Question 11 mov ax, word [rsi+4]

☐ Regsiter
☐ Immediate
■ Memory -
☐ Illegal

Question 12 mov cx, word [rbx+rsi]

☐ Regsiter
☐ Immediate
■ Memory -
☐ Illegal

Question 13 mov ax, byte [rbx]

☐ Regsiter
☐ Immediate
☐ Memory -
■ Illegal -