

Date: _____

ID No

13943

Semester

Summer 2020

Subject

Microprocessor and
Assembly Language

Date / 26 / 09 / 2020

Q No 2:

Answer:

```

mov ax, 7FF0h
add al, 10h
add ah, 1
add ax, 2

```

(a) $CF=1, SF=0, ZF=1, OF=0$

(b) $CF=0, SF=1, ZF=0, OF=1$

(c) $CF=0, SF=1, ZF=0, OF=0$

(d) $CF=0, SF=0, ZF=0, OF=1$

Q4:

Use the following data definitions for coming question:

List B BYTE 10h, 20h, 30h, 40h

List W WORD 8Ah, 3Bh, 92h, 44h, 66h

List D DWORD 1, 2, 3, 4, 5

pointer J DWORD ListD

What will be the value of the destination operand after each of the following instruction execute in sequence?

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```
mov esi, OFFSET ListB
mov al, [esi] ; AL = 10h
mov al, [esi+3] ; A = 40h
mov esi, OFFSET ListW+2
mov ax, [esi] ; AX = 003Bh
mov edi, 8
mov edx, [ListD+edi] ; EDX = 3
mov edx, ListO[edi] ; EDX = 3
mov ebx, pointer1
mov eax, [ebx+4] ; EAX = 2
```

Q No 6: (ii)

Answer:

~~386~~

• 386

• model flat, stdcall

• stack 4096

Exit Process PROTO, dw Exit code ; DWORD

• code

main PROC

```
mov eax, 3h
```

```
mov ebx, 8h
```

```
mov ecx, 1h
```

```
mov edx, 8h
```

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```
add eax, ebx
```

```
add ecx, edx
```

```
sub eax, ecx
```

```
INVOKE EXIT Exit Process, 0
```

```
mov EBP, ESP
```

```
END MAIN
```

(iii)

```
.386
```

```
.model flat,stdcall
```

```
.stack 4096
```

```
ExitProcess PROTO, dw ExitCode: DWORD
```

```
.data
```

```
array WORD 0, 2, 5, 9, 10
```

```
newArray DWORD LENGTHOF array DUP(?)
```

```
.code
```

```
main PROC
```

```
mov ecx, LENGTHOF array
```

```
mov esi, OFFSET array
```

```
mov edi, OFFSET newArray
```


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L1:

```
MOV EAX, 0  
MOV AX, [ESI]  
MOV [EDI], EAX  
ADD ESI, Type Array  
ADD EDI, Type New Array  
Loop L1
```

```
INVOKE Exit Process, 0  
main END P  
END main
```

(iv)

```
INCLUDE Irvine32.Inc
```

```
.data
```

```
Count DWORD ?
```

```
.code
```

```
main PROC
```

```
mov eax, 0 + (0x16)
```

```
mov ecx, 16
```

L1:

```
mov count, ecx
```

```
push ecx
```

```
mov ecx, 16
```

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L2:

```
Call SetTextColor  
push eax  
mov al, 'H'  
call WriteChar  
pop eax  
inc eax
```

LOOP L2:

```
call c10b  
pop eax  
add eax, 10  
mov ecx, count
```

~~Loop L2~~

LOOP L1

```
call c0b  
call waitMsg  
exit  
main ENDP
```


Q NOS:

(i)

```
mov eax, var 1
cmp eax, var 2
jle L1
mov var 3, 10
mov var 4, 30
jmp L2
```

L1: mov var 3, 15

L2:

(ii)

```
cmp val 1, ecx
jna else
cmp ecx, edx
jna else
mov A, 12
jmp next
else: mov B, 6
next:
```

Q 3. (a)Answer:

```

mov eax, TYPE ListB ; EAX = 1
mov eax, LENGTHOF ListB ; EAX = 8
mov eax, SIZEOF ListB ; EAX = 6
mov eax, TYPE ListW ; EAX = 2
mov eax, LENGTHOF ListW ; EAX = 4
mov eax, SIZEOF ListW ; EAX = 8
mov eax, SIZEOF StringZ ; EAX = 17

```

(b)

Answer:

```

mov eax, DWORD PTR ListB

```

(c)

Answer:

```

ListB LABEL DWORD
ListB WORD 3 DUP(?) 2000h

```

.data

```

mov eax, ListB

```