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QF ASSEMBLY

LANGUAGE

(5)

Q11 Use the following data definition for

Ans : a, AL = 10h  
; b, AI = 40h  
; c, AX = 0038h  
; d, EBX = 3  
; e, EDX = 3  
; f, EAX = 2

Q12 Use the following variable for coming question?

Ans mov bx, 0ABCDh ; ~~eax = EAX~~  
mov ~~bx~~ eax, bx ; (a) EAX = 0000ABCDh  
mov bx, 0DCBAh  
movsx eax, bx ; (b) EAX = FFFFABCDh  
mov ax, wVal1 ; (c) AX = 3000h  
xchg ax, wVal2 ; (d) AX = 3000h  
(e) Val 2 = 3000h  
mov wVal1, ax ; (f) Val 1 =  
mov a1, List B ; (g) AL = 50  
mov a1, [List B + 4] ; (h) AL = 40  
mov ax, List w ; (i) AX = 3000h  
mov ax, [List w + 4] ; (j) AX = 1000h  
mov eax, List D ; (k) EAX = 30000000h  
mov eax, [List D + 8] ; (l) EAX = ~~30000000h~~  
20000000h

Q2 Write down the value of carry, sign, zero and overflow after each instruction has executed:

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

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

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

Q6: PART 2:-

Write a program that calculate the following expressions using registers:

$$A = (A+B) - (C+D)$$

- 386

• model flat, stdcall

• Stack 4096

Exit ~~program~~ Proto, dlwExit Code: Dll

• Code

• Main PROC

mov eax, 3h

mov ebx, 8h

mov ecx, 1h

(8)

; (a) EAX = 1

; (b) EAX = 6

; (c) EAX = 6

; (d) EAX = 2

; (e) EAX = 4

; (f) EAX = 8

; (g) EAX = 17

(7)

Q3 Part 2:-

Write an instruction that move all four bytes to the EAX register?

Ans `MOV EAX, DWORD PTR ListB`

Part 3

Insert a label directive in the given data that permits `ListB` to `mov` directly to `EAX` register?

`List B LABEL DWORD`

`List B WORD WORD 3 DUP(?) 2000h`

`.data`

`mov eax, ListB.`

Part 1

What will be the value of `EAX` after each of the following instructions execute?

(7)

Q3 Part 2:-

Write an instruction that move all four bytes to the EAX register?

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`mov eax, ListB.`

Part 1

What will be the value of `EAX` after each of the following instructions execute?

Q5 Part 1:-

Ans  
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:

Part 2:-

cmp val1, ecx  
jna else  
~~com~~ cmp ecx, edx  
jna else  
mov A, 12  
else: mov B, 6  
next:

(4)

L2:

Call Set text color

Push eax

mov al, 'H'

call WriteChar

Pop eax

inc eax

Loop L2

call exit

Pop eax

add eax, 16

mov, ecx, count

Loop L1

call exit

call Waitmsg

exit

main ENDP

Q6  
Ans

PART 1:-

mov eax, 0

mov ecx, 10; Outer loop counter

L1: mov eax, 3

mov ecx, 5; inner loop counter

L2: add eax, 5

Loop L2: repeat inner loop

Loop L1; repeat outer loop.



(3)

```
L1:  
MOV EAX, 0  
MOV AX, (ESI)  
MOV [EDI], EAX  
ADD ESI, TYPE array  
ADD EDI, TYPE newarray  
LOOP L1  
INVOKE Exit Process, 0  
main ENDP  
ENP main
```

Q6 Part 4:-

Include Irvine32.Inc

.data

Count DWORD ?

.Code

main PROC

    mov eax, 0 + (0 \* 16)

    mov ecx, 16

L1:

    mov count, ecx

    push eax

    mov ecx, 16

(2)

```
add eax, ebx
add ecx, edx
sub eax, ecx
```

```
INVOKE ExitProcess, 0
main ENDP
END main
```

Q6 Part 3 :-

Write a program that uses a loop to copy all the elements from an unsigned word array into an unsigned ~~word~~ doubleword array?

- 386

• model flat, stdcall

• Stack 4096

ExitProcess PROTO, dwExitCode:DWORD

• data

• array WORD 0, 2, 5, 9, 10

• new Array DWORD, LENGTHOF array DUP?

• Code

• main PROC

```
mov ecx, lengthof array
```

```
mov esi, OFFSET array
```

```
mov edi, OFFSET newarray
```

(4)

L2:

Call Set text Color

Push Eax

mov al, 'H'

Call WriteChar

Pop eax

inc eax

Loop L2

call exit

Pop eax

add eax, 16

mov , ecx, Count

Loop L1

call exit

call Wait msg

exit

main ENDP

Q6

Ans

PART 1:-

mov eax, 0

mov ecx, 10; Outer loop counter

L1: mov eax, 3

mov ecx, 5; inner loop counter

L2: add eax, 5

Loop L2; repeat inner loop

Loop L1; repeat outer loop.