

Name:

Id#

COE 205, Term 011

Computer Organization & Assembly Programming

Quiz# 2

Date: Saturday, Oct. 6

Suppose that you have the following initial content of the Intel 8086 registers:

AX=FA32H	BX=FFF0H	CX=FFFAH	IP =0FECH
SI =0006H	DI =0005H	DS =2BF1H	CS=1EADH

(1) Suppose that the following data segment is allocated in the segment given in the DS register with an offset of 0. Show the content of the allocated memory, and determine the physical address of next instruction to be fetched from memory. Note that the ASCII code of character `0` is 30H.

<i>I</i>	<i>DB</i>	<i>-80, `24`</i>	<u><i>Address (Hex)</i></u>	<u><i>Memory Content (hex)</i></u>
			<i>000A</i>	
	<i>DW</i>	<i>-50, `42`</i>	<i>000B</i>	
	<i>DD</i>	<i>-255</i>	<i>000C</i>	
<i>L</i>	<i>EQU</i>	<i>128</i>	<i>000D</i>	
<i>J</i>	<i>DB</i>	<i>L-25</i>	<i>000E</i>	
	<i>DW</i>	<i>offset I+16</i>	<i>000F</i>	
<i>K</i>	<i>DB</i>	<i>-1, 2 dup(4, 2 dup(-20))</i>	<i>0010</i>	
<i>M</i>	<i>DB</i>	<i>`Q#2\$</i>	<i>0011</i>	
			<i>0012</i>	
	<u><i>Address (Hex)</i></u>	<u><i>Memory Content (hex)</i></u>	<i>0013</i>	
	<i>0000</i>		<i>0014</i>	
	<i>0001</i>		<i>0015</i>	
	<i>0002</i>		<i>0016</i>	
	<i>0003</i>		<i>0017</i>	
	<i>0004</i>		<i>0018</i>	
	<i>0005</i>		<i>0019</i>	
	<i>0006</i>		<i>001A</i>	
	<i>0007</i>		<i>001B</i>	
	<i>0008</i>		<i>001C</i>	
	<i>0009</i>		<i>001D</i>	

Physical address of next instruction to be fetched =

(2) Show the content of the registers and memory locations modified after the execution of each of the following instructions. Use the initial content of the registers and memory locations as initial values for the subsequent instructions. Furthermore,

specify the addressing modes of the *source and destination operands* in each instruction.

a. SUB CL, BL

b. MOV WORD PTR J-1, offset I+2

c. ADD [DI-3], AL

d. MOV WORD PTR [BX+SI+14], L

(3) Write 8086 assembly code to ask the user to enter a lower case character and display it in upper case. Note that the ASCII code of character 'A' is 41h and that of 'a' is 61h. A sample execution of the program is as follows:

Enter a lower case character: h

Character in upper case is: H