

Name:

Id#

**COE 205, Term 033**  
**Computer Organization & Assembly Programming**  
**Quiz# 3 Solution**

Date: Sunday, July 11, 2004

**Q1.** 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, in hexadecimal. Note that the ASCII code of character 'A' is 41H and that of 'a' is 61H. The ASCII code of '\$' character is 24H.

```
I    DB    112, -112, 'CD'  
J    DW    256, 0EH  
K    EQU   23  
L    DW    J+K  
      DD    offset I+20  
Sname DB   5, 6 dup('$')
```

<i>Variable</i>	<i>Memory Address (Hex)</i>	<i>Memory Content Hex)</i>	
<i>I</i>	0000	70	
	0001	90	
	0002	43	
	0003	44	
<i>J</i>	0004	00	
	0005	01	
	0006	0E	
	0007	00	
<i>L</i>	0008	1B	
	0009	00	
	000A	14	
	000B	00	
	000C	00	
	000D	00	
	<i>Sname</i>	000E	05
		000F	24
0010		24	
0011		24	
0012		24	
0013		24	
0014		24	
0015			
0016			

**Q2.** Write a program to ask the user to enter a character in upper case and in a new line print the character in both upper case and lower case.

```
.model small
.stack 100
.data
MSG DB 'Enter a character in upper case:$'
NL   DB 10, 13, '$'
.code
.startup
; printing the first message
    MOV AH, 9
    MOV DX, offset MSG
    INT 21H
;reading the upper case character
    MOV AH, 1
    INT 21H

    MOV BL, AL
; printing a new line
    MOV AH, 9
    MOV DX, offset NL
    INT 21H
;printing the upper case character
    MOV AH, 2
    MOV DL, BL
    INT 21H
; printing the lower case character
    ADD DL, 20h
    INT 21h
.exit
END
```

**Q3.** Define a variable called Iname to be used for reading initial names of students such that the maximum allowed size is 15 characters for each name. Then show the code that will be used for reading a single name using INT 21H.

```
Iname DB 16, 17 dup(?)

;to read a name into Iname

    MOV AH, 10
    MOV DX, offset Iname
    INT 21H
```