



Course: COAL
Program: BS(CS,DS)
Duration: 1 Hour
Paper Date: 11-11-2022
Section: All

Exam: Midterm-II

Course Code: EE2003
Semester: Fall 2022
Total Marks: 30
Page(s): 3
Roll No.

Your Section:

Instruction/Notes: This is an open notes/book exam. Sharing notes and calculators is NOT ALLOWED. All the answers should be written in provided space on this paper. Rough sheets can be used but will not be collected and checked. In case of any ambiguity, make reasonable assumptions. Questions during exams are not allowed.

Question 1 [CLO 1,2,3,5] [3x5 = 15 Marks]: Short questions

- i. Replace the following instructions with a single instruction that has the same effect.

a.	pop ip	Ret
b.	mov ip, L5	jmp L5
c.	push word L1 jmp L2 L1:	call L2

- ii. Ret 5 is: - Valid statement - Invalid statement
Suppose SP=0xFFFFE, if the above statement is valid what will be its new value? If it's not valid, why?

Syntactically valid statement

SP = 0x0005

Logically Invalid statement

stack operates in words

- iii.

Assume that a function FUNC is called as below:

PUSH AX; parameters
PUSH BX
PUSH WORD [BX]
CALL FUNC
...

Answer the following questions:

- a. The value of AX is stored at **[BP + 8]**
b. The value of CX is stored at **[BP - 2]**

<p>And the function is implemented as follows: FUNC:</p> <pre> PUSH BP MOV BP, SP PUSH CX PUSH DX ... </pre>	<p>c. The FUNC clears all parameters off the stack so it uses RET 6</p>
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- iv. Which character will be displayed at the top left of the screen? Suppose the character at Ascii code 0x41 is 'A' and the character at ASCII code 0x02 is '&'.

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mov byte[es:0], 0x41
mov byte[es:1], 0x02

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Answer: A

- v. See the code below and answer the following questions.

<pre> mov ax, 0xb800 mov es, ax mov di, 3840 sub di, 2 mov ax, 0x0720 mov cx, 160 std rep stosw </pre>	<p>a. What is the value of the direction flag? 1</p> <p>b. Value of DI after the execution of code? 3518</p> <p>c. Write in one line precisely what this code is doing?</p> <p>Clearing second last and third last line of the display memory</p>
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Question 2 [CLO 1,2,3,5] [15 Marks]: Write a program that right aligns the text on display memory using String Instructions. Assumption: Area not having text is space with black background (0x0720).

Sample Output:

<pre> Hello, This is sample text On Screen This is another Line... on Display Memory Abc xyz... </pre>	<pre> Hello, This is sample text On Screen This is another Line... on Display Memory Abc xyz... </pre>
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Hello Again.

Hello Again.

**Display Memory BEFORE Execution of your
program**

**Display Memory AFTER Execution of your
program(All the text is right aligned now)**

Write Your Code here:

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