

National University of Computer and Emerging Sciences, Lahore Campus



Course:	COAL	Course Code:	EE2003
Program:	BS(CS,DS)	Semester:	Fall 2022
Duration:	1 Hour	Total Marks:	30
Paper Date:	11-11-2022	Page(s):	3
Section:	All	Roll No.	
Exam:	Midterm-II	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	
b.	mov ip, L5	
c.	push word L1 jmp L2 L1:	

- 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 write why?

- iii.

<p>Assume that a function FUNC is called as below:</p> <p>PUSH AX; parameters</p> <p>PUSH BX</p> <p>PUSH WORD [BX]</p> <p>CALL FUNC</p> <p>...</p> <p>And the function is implemented as follows:</p> <p>FUNC:</p> <p>PUSH BP</p> <p>MOV BP, SP</p> <p>PUSH CX</p> <p>PUSH DX</p> <p>...</p>	<p>Answer the following questions:</p> <p>a. The value of AX is stored at [BP + _____]</p> <p>b. The value of CX is stored at [BP - _____]</p> <p>c. The FUNC clears all parameters off the stack so it uses RET _____</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 '&'.
 mov byte[es:0], 0x41
 mov byte[es:1], 0x02

Answer: _____

- 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? _____</p> <p>b. Value of DI after the execution of code? _____</p> <p>c. Write in one line precisely what this code is doing?</p> <p>_____</p> <p>_____</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... Hello Again. </pre>	<pre> Hello, This is sample text On Screen This is another Line... on Display Memory Abc xyz... Hello Again. </pre>
<p>Display Memory BEFORE Execution of your program</p>	<p>Display Memory AFTER Execution of your program(All the text is right aligned now)</p>

Write Your Code here: