



Daffodil International University  
Faculty of Science & Information Technology  
Midterm Examination, Spring-2023

Course Code: CSE231

Course Title: Microprocessor, Embedded Systems and IoT

Level: 3

Term: I

Batch: 59

Time: 1 Hour and 30 Minutes

Marks: 25

**Answer ALL Questions**

*[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]*

1.	a)	Suppose you have to design a system that has just one task, to turn off a light at a specified time. You will have to use parts that are already available in the market to design this system. <b>Recommend</b> one among microcontroller and microprocessor by <b>comparing</b> the two.	[5]	CO1																
2.	a)	Explain with calculations, for <b>MOV AX, [SI]</b> , from where the value of AX register will come from if <b>DS = 4C60h</b> and <b>SI =</b> last 3 digit of your student ID in hexadecimal.	[5]	CO2																
	b)	MOV DS, AB40h MOV SI, 0B78h MOV AX, 2[SI] ADD AX, 5h  For the code above, <b>Determine</b> the final value of AX showing calculations to support your opinion. The address and content of some memory locations are given.	[5]																	
		<table><tr><th>Address</th><th>Content</th></tr><tr><td>157EF5h</td><td>23h</td></tr><tr><td>157EF4h</td><td>22h</td></tr><tr><td>ABF7Bh</td><td>12h</td></tr><tr><td>ABF7Ah</td><td>A2h</td></tr><tr><td>AB87Ch</td><td>26h</td></tr><tr><td>AB87Bh</td><td>22h</td></tr><tr><td colspan="2">Memory</td></tr></table>	Address		Content	157EF5h	23h	157EF4h	22h	ABF7Bh	12h	ABF7Ah	A2h	AB87Ch	26h	AB87Bh	22h	Memory		
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	For each of the cases below, <b>determine</b> the value of SF, ZF, PF, CF and OF and <b>justify</b> the values with proper reason.																			
c)	SUB AL, BL Given, AL= 0Fh and BL= 1Fh	[2.5]																		
d)	NEG AX Given AX=0000h	[2.5]																		
3		Apply the idea of loop to write an assembly code to output the odd numbers between 0 and 10.	[5]	CO3																