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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. **Recommend** one among microcontroller and microprocessor by **comparing** the two.	**[5]**	**CO1**
2.	***a)***	**Explain** with calculations, for **MOV AX, [SI]**, from where the value of AX register will come from if *DS* = 4C60h and *SI* = last 3 digit of your student ID in hexadeeimal.	**[5]**	**CO2**

	b)	MOV DS, AB40h
		MOV SI, 0B78h
		MOV AX, 2[SI]
		ADD AX, 5h
		
		For the code above, **Determine** the final value of AX showing calculations to support your opinion.
		The address and content of some memory locations are given.
		
		Memory: 157EF5h → 23h; 157EF4h → 22h; ABF7Bh → 12h; ABF7Ah → A2h; AB87Ch → 26h; AB87Bh → 22h
			[5]	

		For each of the cases below, **determine** the value of SF, ZF, PF, CF and OF and **justify** 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**