Classwork 05 CPE221 Computer Organization

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Spring 2025, UAH

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① Consider an ARM Assembly (20 points total)

```
        .global _start
        _start:
1           LDR R0, =array
2           LDR R1, [R0, #4]
3           MOV R2, #99
4           STR R2, [R0, #8]
5           MOV R7, #1
6           MOV R0, #0
7       done: B done

        .data
8       array: .word 11, 22, 33, 44, 55
```

Assume the 32-bit instruction set architecture, and 4 byte word size.

Further assume that the first instruction is stored in address 0x00 00 00 00.

And, the starting address of array is 0x20.

Questions

1. Explain what each line of the code is doing. (10 points)

2. What is the value in register R0, R1 and R7 after the execution of instruction in line 3. (4 points)

3. What is the value stored in the memory address 0x00000028 after the execution of the program. (3 points)

4. What is the opcode for the instruction 2 as you see in the emulator. (3 points)