

# CMSC 313 Spring 2024

## Quiz 5 - Answers

Full Name \_\_\_\_\_ Student ID \_\_\_\_\_

Questions on this quiz are either short response or true or false. Please print your answers clearly. If you show your work and your answer is wrong, you may have an opportunity of partial credit.

**Question 1.** You are given the following x86-64 assembly code:

```
section .data
    arr db 1,2,3,4    ;0x0000 0000 address
    stop db 0,0,0,0  ;0x0000 0004 address

section .text
    global main
main:
    mov rcx, 0
loop:
    mov al, BYTE [arr+rcx]
    inc rcx
    add BYTE [arr+rcx], al
    cmp cl, BYTE [arr+1]
    jl loop
```

a. (32 pts) After running the program, what are the values stored at address 0x0000 0000 through 0x0000 0007? You can display values in hex or decimal. You must specify your base.

address	value
0x0000 0000	1
0x0000 0001	3
0x0000 0002	6
0x0000 0003	10
0x0000 0004	0
0x0000 0005	0
0x0000 0006	0
0x0000 0007	0

b. (6 pts) What are the final values of the registers RAX and RCX?

RAX = 6, RCX = 3

c. (2 pts) Can this program seg-fault? Yes or No.

Yes.