Instructor: Mohammad ILYAS March 25, 2021

Name: Cattan Dov Grade: **/10**

Last First

1.[6] Write an MSP430 **assembly language** subroutine, **FILTER**, to examine the elements of an array of positive word-size numbers. The array starts at a memory location pointed to by register R5. The first word in the array is the length (size) of the array. The next word in the array is the **maximum value** allowed in the array. The subroutine will scan the whole list (one word at a time) and replace all values that exceed the maximum value with the maximum value. Filtering means replacing any value that exceeds the maximum with the maximum value itself. Please include brief comments for each statement.

FILTER:

```
push R5
mov.w @R5+,R6
mov.w @R5+,R7

LOOP_I:
mov.w @R5+,R4
cmp.w R7, R4
jg LOOP_II

LOOP_II
mov.w R7,0(R5)
jmp LOOP_III
pop R5

LOOP_III:
dec R6
jnz LOOP_I
ret
```

2.[4] For the following statements about MSP430, please mark each as True or False:

- Interrupts are processed only after completing the instruction being executed. [F]
- When a peripheral device requests an interrupt, the CPU pushes the PC, SR and any registers that currently contain application's data into the stack. [T]
- Interrupts are always processed and cannot be disabled by the user. [F]
- Interrupts can be prioritized by the user as part of module initialization. [T]

==========

I have not taken help from anyone or provided help to anyone about this quiz and the answers I have provided are completely based on my own understanding.

DOV CATTAN 3/25/21

Sign and date