Lastname:KEY BB id:_____

[10 pts] Complete the coding below for the SCOMP microprocessor

Assume the following 16 bit (extended) instruction set has been design and the data A,B,C,D etc. start at address 10,11,12 and 13 in memory.

Opcode	Instruction Mnemonic	Operation Performed
00xx	**ADD *address***	**AC <= AC + contents of memory address**
01xx	**STORE *address***	**contents of memory address <= AC**
02xx	**LOAD *address***	**AC <= contents of memory address**
03xx	**JUMP *address***	**PC <= address**
04xx	**JNEG *address***	**If AC < 0 Then PC <= address**
05xx	**SUBT *address***	**AC = AC - MDR**
06xx	**XOR *address***	**AC = AC XOR MDR**
07xx	**OR *address***	**AC = AC OR MDR**
08xx	**AND *address***	**AC = AC AND MDR**
09xx	**JPOS *address***	**IF AC > 0 THEN PC = address**
0Axx	**JZERO *address***	**IF AC = 0 THEN PC = address**
0Bxx	**ADDI *address***	**AC = AC + *address* (using sign extension !)**

[5points] Complete the coding below for the opcode (using 4 HEX digits)

16 bit OP code	Instruction
02 12	Load AC with C
00 10	ADD A to AC
09 07	IF AC>0 THEN JUMP to address 07
06 13	Perform XOR of AC and memory location D
0B FF	Add immediate value -1 to AC

[5 points] Explain operation performed or give instruction mnemonic

16 bit OP code	Instruction
03 04	JUMP to address 04
0B 14	Add decimal immediate value 20 to AC
08 12	Perform AND of AC and memory location C
01 10	Store AC at address A
05 11	Subtract B from AC