# CSC 260 Computer Organization

Given the following instruction format, 16-bit register file, memory values, and MIPS assembly language program:

|  |  |  |
| --- | --- | --- |
| Instruction | Op Code (decimal) | Function Code (decimal) |
| Add | 0 | 32 |
| Sub | 0 | 34 |
| And | 0 | 41 |
| Or | 0 | 37 |
| Xor | 0 | 38 |
| Addi | 8 | N/A |
| Lw | 35 | N/A |
| Sw | 43 | N/A |
| J | 4 | N/A |

16-bit register file values:

$0 = 0000 H mem[0] = 4000 H

$1 = 0009 H mem[1] = 0101 H

$2 = 002A H mem[2] = 0102 H

$3 = 0014 H mem[3] = 0103 H

$4 = 0003 H mem[4] = 0104 H

$5 = FF12 H mem[5] = 0105 H

$6 = 0076 H mem[6] = 0106 H

$7 = FFC8 H mem[7] = 0107 H

$8 = 0003 H mem[8] = 0108 H

Decode and execute the MIPS assembly language program. Show the **changed register and memory values**, in hexadecimal format, after the execution of each of the above assembly language instructions.

Complete the following MIPS assembly language program:

1. 8C860002 H
2. 00A73025 H
3. 01032029 H
4. 00C22826 H
5. 00224022 H