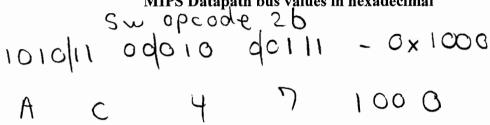Score: _____   Name:_____

ECE 3055 Quiz II, Wednesday September 10

The instruction, **sw $7, 0x1000($2)** is executed on the MIPS single clock cycle datapath. Assume the registers are all loaded with the register number prior to execution and all data memory words are loaded with the memory address of the first byte of the word. Fill in the values of the following control signals and buses.

MIPS Datapath bus values in hexadecimal

Sw opcode 2b

101011 00010 00111 - 0x1000

A   c   4   7   100 0

Instruction Bus = AC47 1000

Register file Read Data Bus 1 = 0x0000000 2

Register file Read Data Bus 2 = 0x0000000 7

Data Memory Write Data Bus = 0x000000 7

ALU Result Bus = 0x 1002

MIPS Control Signals in Binary

MemRead = 0

ALUSrc = 1

MemtoReg = X or 1 (1 on real hardware)

ALU Op (two-bits) = 00

ALU control (three bits) = 010 (add)