

Score: \_\_\_\_\_

Name: \_\_\_\_\_

### ECE 3055 Quiz III, Wednesday, September 15

The instruction, **lw \$2,\$0(0x200)** 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. Each word of data memory contains its own address.

lw = 35

#### MIPS Datapath bus values in hexadecimal

1000 | 11 0000 00010 | 0x0200  
8 C 0 2

Instruction Bus = 8C020200

Register file Read Data Bus 1 = 00000000

Register file Read Data Bus 2 = 00000002

ALU Result Bus = 00000200

Write Data Bus = 00000200

#### MIPS Control Signals in Binary

MemRead = 1

ALUSrc = 1

RegDst = 0

ALU Op (two-bits) = 00

ALU control (three bits) = 010