

Score: _____

Name: _____

ECE 3055 Quiz III, Wednesday, September 14

The instruction, **sub \$3, \$4, \$15** is assembled using standard MIPS/SPIM syntax and executed on the MIPS single clock cycle datapath described in Section 4.4 and summarized in Figure 4.17 of the textbook. Assume the registers are all loaded with the register number prior to execution and all data memory words are loaded with the (byte addressable) memory address of the first byte of the 32-bit word. Fill in the values of the following control signals and buses.

MIPS Datapath bus values in hexadecimal

0000	00	00	00	0000	00	00	10	0010
0	0	8	F	1	8	2	2	

Instruction Bus = 0x008F1822 3 pts.

Register file Read Data Bus 2 = 0x0000000F 1 pt. each

ALU Result Bus = 0xFFFFFFFF5

Write Register Bus = 0x03

Write Data Bus = 0xFFFFFFFF5

MIPS Control Signals in Binary

RegWrite = 1 .5 pts

RegDst = 1

MemtoReg = 0

ALU Op (two-bits) = 10

ALU control (four bits) = 0110