

Score: _____

Name: _____

ECE 3055 Quiz III, Wednesday, September 18

The following sequence of MIPS instructions is clocked into the pipeline shown on page 472-476 of your textbook. Examine this figure carefully to see exactly where each signal is located (i.e. before or after pipeline registers). At the end of Clock cycle 5, Indicate the resulting register values **in hexadecimal** in the spaces provided below. Assume all data memory locations contain the word address of the location, and that the address shown in any LW/SW instructions below is already a word address (not byte!). Assume that each register contains a value equal to the register number prior to execution of this code. List the actual value produced by the hardware design described in the text – even if the value is not used or saved.

lw	\$2,1	wb
andi	\$7,\$6,3	dm
sub	\$3,\$5,\$1	ex
sw	\$4,3	decode
or	\$2,\$6,\$5	fetch

Quiz B

Instruction = 0x AC04 0003 (AC030004)

1 pt. / blank

Read Data 1 = 0x 00000000

Read Data 2 = 0x 00000004 (00000003)

ALU Result = 0x 00000004

(Data Memory) Address = 0x 00000002 (00000003)

don't care or
X-.5
(this line only)

Write Register (Address) = 0x 02 (03)

Write Data (input at register file after mux) = 0x 00000001

ALU control (3-bits in binary) = 110

MemRead = 0

RegWrite = 1