

0907232 Computer Organization (Spring 2001)

Quiz 1

رقم الشعبة: ١

رقم التسجيل:

الاسم:

Instructions: Time 10 minutes. Closed books and notes. No calculators. Please answer all problems in the space provided. **No questions are allowed.**

<Good Luck>

Q. Convert the following pseudo-instruction into real MIPS instructions.

li \$t2, big #\$t2 = big, (big is a 32-bit word)

lui \$t2, upper-half(big)

ori \$t2, \$t2, lower-half(big)

Q. Convert the following pseudo-instruction into real MIPS instructions.

lw \$t2, addr #\$t2 = Memory[addr], (addr is a 32-bit address)

lui \$t2, upper-half(addr)

ori \$t2, \$t2, lower-half(addr)

lw \$t2, 0(\$t2)

Q. Consider the following MIPS instructions:

bfind:

addi \$t1, \$zero, "b" # \$t1 = "b"

b_loop:

lbu \$t0, 0(\$a0) # \$t0 = next character

addi \$a0, \$a0, 1 # \$a0++

beq \$t0, \$t1, b_found # compare character to "b"

bne \$t0, \$zero, b_loop # repeat if not null yet

b_found:

addi \$v0, \$a0, -1 #\$v0 = \$a0

j \$ra

Assume that Register \$a0 contains the Address 0x12345678 and the string "Assembly" is stored in the memory starting at this address. At the end of executing these instructions, the register \$v0 will have the value 0x1234567d