

CSCI 2321 (Principles of Computer Design), Spring 2004

Quiz 2 Solution

1. (5 points) Consider the following MIPS assembly-language instructions.

```
addi    $s0, $zero, 10
addi    $s1, $zero, 12
add     $s2, $s0, $s1
sub     $s3, $s0, $s1
slt     $t0, $s2, $s3
```

After these instructions are executed, what will be the contents (in base-10) of the following registers?

- (a) **\$s2 Solution:** 22
(b) **\$s3 Solution:** -2
(c) **\$t0 Solution:** 0
2. (5 points) Translate the following lines of C code into MIPS assembly language, assuming that register **\$s0** contains the value of **a**, register **\$s1** contains the value of **b**, and register **\$s2** contains the address of the first element of **c**. (*Hint:* Remember that register **\$zero** always contains the value 0.)

```
if (a == b)
    c[0] = a;
else
    c[0] = 0;
```

Solution: Here is one solution.

```
        bne    $s0, $s1, Else
        sw     $s0, 0($s2)
        j     End
Else:   sw     $zero, 0($s2)
End:
```