CMPUT 229 - Computer Organization And Architecture I
Quiz #1 — Winter 2014

Jacqueline Smith
Computing Science Department - University of Alberta

Name:

CMPUT 229 Honor Code

By turning in the quiz solution for grading, I certify that I have produced the solution in accordance to the academic integrity policies in Section 26.1 of the University of Alberta 2013/2014 Calendar.

Question 1 (5 points):

Assume that register `$s0` contains `0x0000000F`.

What is the value of register `$t0` in hex after the following instructions?

```
sll $t0, $s0, 2
andi $t0, $t0 0x000F
```

Question 2 (5 points):

Using the tables on the back page of this quiz, give the hexadecimal representation of the following instruction:

```
add $t0, $t0, $t1
```

NAME	MNEMONIC	FORMAT	OPERATION	OPCODE/ FUNC (hex)
Add	add	R	R[rd] = R[rs] + R[rt]	0x00/0x20

NAME	NUMBER
$zero	0
$at	1
$v0-$v1	2-3
$a0-$a3	4-7
$t0-$t7	8-15
$s0-$s7	16-23
$t8-$t9	24-25
$k0-$k1	26-27
$gp	28
$sp	29
$fp	30
$ra	31

BASIC INSTRUCTION FORMATS

R	opcode	rs	rt	rd	shamt	funct
	31 26	25 21	20 16	15 11	10 6	5 0

I	opcode	rs	rt	immediate
	31 26	25 21	20 16	15 0

J	opcode	address
	31 26	25 0