

Name:
cs30x_____
Score:

Quiz 2
CSE 30
Winter 2001

#1. a) Fill in the blanks for the appropriate logical equivalence for the following compare/branch:

```
mov  420, %12
cmp  %12, 606
bg   label
nop
```

if (_____ is _____) then
goto label

b) Is the branch taken in the code snippet above? (Circle the correct answer.) YES NO

#2. What is the value (**in hex**) of %o1 after each set of instructions:

a) set 0x87654321, %o1
 sra %o1, 16, %o1

Value in %o1 at this point is 0x_____

b) set 0x87654321, %o1
 sll %o1, 8, %o1

Value in %o1 at this point is 0x_____

c) set 0x87651234, %o1
 set 0xA5A5A5A5, %o2
 xor %o1, %o2, %o1

Value in %o1 at this point is 0x_____

d) set 0x87651234, %o1
 set 0xA5A5A5A5, %o2
 bclr %o2, %o1

Value in %o1 at this point is 0x_____

(over)

#3. Write the equivalent unoptimized SPARC assembly language instructions to perform the following C code fragment.

C

```
x = foo( -9876, 123 );
```

SPARC assembly

```
/* x is mapped to %12 */
```

Now optimize your answer to eliminate any delay slots.

Optimized version of above SPARC assembly
