

Signature \_\_\_\_\_

Name \_\_\_\_\_

cs30x \_\_\_\_\_

Student ID \_\_\_\_\_

Score:

**Quiz 2**  
**CSE 30**  
**Fall 2003**

#1. a) Write the SPARC assembly instructions to define the following **global** variables in the **data** segment:

```
char wayne[] = "Stacy's Mom!";  
int sh = -805;  
double dd = 94.9;
```

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

a)        set  0xFEEDDADA, %o1  
          sll  %o1, 8, %o1

Value in %o1 at this point is **0x**\_\_\_\_\_

b)        set  0xFEEDDADA, %o1  
          sra  %o1, 12, %o1

Value in %o1 at this point is **0x**\_\_\_\_\_

c)        set  0xFEEDDADA, %o1  
          set  0x96969696, %o2  
          or  %o1, %o2, %o1

Value in %o1 at this point is **0x**\_\_\_\_\_

d)        set  0xFEEDDADA, %o1  
          set  0x96969696, %o2  
          btog %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 = 8675;

if ( x > 59 )
    x = x + 15;
else
    x = x % 6;
```

**SPARC assembly**

```
/* x is mapped to %17 */
```

Now optimize your answer to eliminate any delay slots:

**Optimized version of above SPARC assembly**