

Name:
cs30x_____
Score:

Quiz 2
CSE 30
Winter 2003

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

```
char *str = "Super Bowl";  
long ld = -411;  
double df = 4.21;
```

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

a) set 0xBABEFACE, %o1
 sll %o1, 16, %o1

Value in %o1 at this point is **0x**_____

b) set 0xBABEFACE, %o1
 sra %o1, 8, %o1

Value in %o1 at this point is **0x**_____

c) set 0xBABEFACE, %o1
 set 0xA6A6A6A6, %o2
 or %o1, %o2, %o1

Value in %o1 at this point is **0x**_____

d) set 0xBABEFACE, %o1
 set 0xA6A6A6A6, %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 | SPARC assembly |
|---|---|
| <pre>for (a = 5937; a >= -14; --a) { x = a + 55 - 22; } a = x;</pre> | <pre>/* a is mapped to %13 */ /* x is mapped to %16 */</pre> |

Now optimize your answer to eliminate any delay slots:

Optimized version of above SPARC assembly