

Name:
cs30x_____
Score:

Quiz 2
CSE 30
Fall 2002

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

```
char *s = "Big One";  
long l = 420;  
double d = 7.891;
```

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

a) set 0xC99CD7D3, %o1
 sll %o1, 16, %o1

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

b) set 0xC99CD7D3, %o1
 sra %o1, 8, %o1

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

c) set 0xC99CD7D3, %o1
 set 0x96329632, %o2
 or %o1, %o2, %o1

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

d) set 0xC99CD7D3, %o1
 set 0x96329632, %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
<code>x = 5882;</code>	<code>/* x is mapped to %13 */</code>
<code>do {</code>	
<code>--x;</code>	
<code>a = x % 55;</code>	<code>/* a is mapped to %15 */</code>
<code>} while (a >= 42);</code>	

Now optimize your answer to eliminate any delay slots:

Optimized version of above SPARC assembly