

Signature _____

Name _____

cs30x _____

Student ID _____

Score: _____

Quiz 2
CSE 30
Winter 2004

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

```
char incubus[] = "Megalomaniac";  
long sli = -805;  
double dd = 94.9;
```

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

a) set 0xBABED0D0, %o1
 sll %o1, 16, %o1

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

b) set 0xBABED0D0, %o1
 sra %o1, 8, %o1

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

c) set 0xBABED0D0, %o1
 set 0xA9A9A9A9, %o2
 and %o1, %o2, %o1

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

d) set 0xBABED0D0, %o1
 set 0xA9A9A9A9, %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

```
if ( ((x * 3) > 7) && (x <= 37) )  
    fubar( x );
```

SPARC assembly

```
/* x is mapped to %l0 */
```

Now optimize your answer to eliminate any delay slots:

Optimized version of above SPARC assembly