

Name: _____

Quiz 2

1. Why must a shell program call `fork()` before `exec()` when executing a user command?

The `exec()` system call overwrites the memory of the current process. If the shell called `exec()` directly it would cease to exist. Instead, the shell must call `fork()` to create a new process to run the user command before it calls `exec()` to run the requested program.

2. Threads are assigned dedicated instances of which of the following pieces of program state?

a. Global variables

b. Stack memory

c. Heap memory

d. File descriptors

e. Registers

3. What is the output of the following program (assume no errors)?

<code>void main()</code>	The output is:
<code>{</code>	
<code> int x = 0;</code>	2
	1
<code> if (fork() == 0) {</code>	0
<code> x++;</code>	
<code> if (fork() == 0)</code>	
<code> x++;</code>	
<code> else</code>	
<code> wait(NULL);</code>	
<code> } else</code>	
<code> wait(NULL);</code>	
<code> printf("%d\n", x);</code>	
<code>}</code>	