**Assignment 4.45**

1. **In light of analysis done in Practice Problem 4.7, does this code sequence correctly describe the behavior of the instruction pushq %rsp? Explain.**

**ANSWER:** The sequence does not correctly describe the *pushq %rsp* instruction. Considering that *REG* is *%rsp,* the command *%rsp – 8* should be pushed onto the stack. This command would be written as *-8 (%rsp)*, which is incompatible with the given code. The given code would need to be rewritten to work with *%rsp* and all other registers. The code could be rewritten as follows:

***movq REG, -8(%rsp)***

***subq $8, %rsp***