**Chapter 15 - Exercises**

**15.1. What are some typical distinguishing characteristics of RISC organization?**

● Large number of registers

● Limited instruction set

● Wants to optimize pipeline

**15.2. Briefly explain the two basic approaches used to minimize register-memory operations on RISC machines.**

● Use of algorithms and the compiler to maximize register usage

● Use more registers so that more variables can be held in registers for longer.

**15.3. If a circular register buffer is used to handle local variables for nested procedures, describe two approaches for handling global variables**.

● Assign them to memory locations by the compiler, and then instructions will use memory-reference operands.

● Use a set of global registers.

**15.4. What are some typical characteristics of a RISC instruction set architecture?**

● One instruction per cycle.

● Register-to-register operations.

● Simple addressing modes.

● Simple instruction formats

**15.5. What is a delayed branch?**

Delayed branch, a way of increasing the efficiency of the pipeline, makes use of a branch that does not take effect until after execution of the following instruction.

**Answers to Questions**