

Quiz 1

Course: cs241 - System Programming, CS Department

Date: February 1, 2006

Netid:

Note: Completion of quiz is an individual effort. The quiz takes 10 minutes. Each question is 1 point. The student gets additional 5 points for just participating and taking the quiz.

1. What is a process?

- a. Set of Instructions
- b. Executable program with its own address space and process control block
- c. Executable program

2. Stack Pointer is

- a. Included in a process control block
- b. Stored on disk in the header of a file
- c. Received from a web client

3. Difference between static and automatic variables is:

- a. Static variables are stored in the stack of the program image and automatic variables are stored in heap part of the program image.
- b. Static variables persist throughout the execution of a program where automatic variables exist only through the block in which they were declared and are discarded when the defining block exits.
- c. Static variables must be declared inside of functions where automatic variables must be declared always outside of functions.

4. Program Counter represents the following information

- a. Address of the Memory Base Information
- b. Address of the Process Identification (PID)
- c. Address of the Next Instruction

5. Consider the following statement ‘Transition of process state from “Blocked” to “Ready” is not allowed.’ This statement is

- a. True
- b. False

6. **A process gets from “Running” state to “Blocked” state if**
 - a. Process runs out of time slice (quantum)
 - b. Process calls a ‘read’ system call
 - c. Process calls an ‘exit’ system call

7. **A child process has the following characteristics**
 - a. It is running in the same address space as its parent process
 - b. It uses separate address space and the same memory base register of the parent process
 - c. It uses separate address space and separate stack pointer from the parent pointer

8. **Process context switching involves**
 - a. Moving a process from “Blocking” to “Running” state
 - b. Changing Process Control Block structures between an old and a new process
 - c. Capturing an Interrupt and changing the time slice for the running process

9. **Context switching operation represents a pure overhead in the OS process management. This means**
 - a. Only daemon processes can run during the context switch operation
 - b. No other useful work can be done during the context switch operation
 - c. Only interrupts can be processed during the context switch operation

10. **Let us assume four processes being forked and all four processes are already active for 30 minutes in a single processor computer system. Let us assume that two of these four processes wait for information from the disk. Which of the state information about these processes is correct?**
 - a. P1: ready, P2: running, P3: running, P4: blocking
 - b. P1: running, P2: blocking, P3: ready, P4: blocking
 - c. P1: blocking, P2: running, P3: blocking, P4: running
 - d. P1: blocking, P2: running, P3: new, P4: blocking