

Quiz 1 + Solutions

CS 423UG Fall 2005

September 9, 2005

Instructions

You can turn in your HW1's at the end of the quiz.

- There are **10 questions** that appear on the next slide
- You have **10 minutes** from the time the questions, to finish your quiz
- For each question, select the BEST possible answer
- Please mark your answers clearly
- We will collect the quiz papers right after that, and continue with the lecture
- *Before I turn to the next slide, please write your name and other information clearly on the answer sheet given to you.*

1. If you can read this text clearly, you are ok. If you cannot read this, please move forward in the classroom until you can read this text comfortably.
2. Questions will appear on the next slide.

QUIZ 1 Solutions

- In a computer, there are 20 "ready" processes, 5 "blocked" processes and 4 "running" processes. The computer has:
 - 1 CPU
 - 2 CPU's
 - 3 CPU's
 - 4 or more CPU's**
- Which of the following instructions should be privileged (checked thoroughly before allowing a process to execute)?
 - Read value of timer
 - Read the clock
 - Clear the memory**
 - Yield the CPU to scheduler
- When a CPU divides by zero, what happens IMMEDIATELY afterward?
 - The computer crashes.
 - A TRAP is executed.**
 - The CPU kills the process.
 - None of the above.
- Which of the following is NOT a process?
 - A Firefox browser.
 - A Command shell.
 - A File.**
 - Acrobat PDF reader.
- Which of the following is common to two different user-level threads that belong to the same process?
 - Program Counter.
 - Stack.
 - Address Space.**
 - None of the above.
- Which of the following will IMMEDIATELY change the PCB of a process?
 - The CPU context switches the process out from the CPU.**
 - The process executes an instruction.
 - The process initiates a system call.
 - The CPU, while executing the process, receives an interrupt from the disk device for a request by another process.
- Consider a system where no users are logged in and where no useful processes have been started up by the OS. What is the CPU doing?
 - The CPU may be sleeping.
 - The CPU is busy-waiting (a while(1) loop).
 - The CPU is running a dummy OS process that does nothing useful.
 - Any of the above.**
- One of the 3 threads in a process calls fork(). When the system call returns successfully, how many NEW threads does the system contain? All threads are kernel-level threads (assume Solaris-style threads).
 - 6
 - 3**
 - 1
 - None of the above.
- Which of the following metrics is the LEAST important for batch systems?
 - Turnaround Time
 - Response Time**
 - Waiting Time
 - Efficiency
- Which of the following processes is typically the MOST I/O-bound?
 - Internet Explorer Browser (text pages)
 - Unix Command shell
 - Emacs editor window
 - Windows Media Player (MPEG player)**