1. Set time of day clock, Disable interrupts, changing memory maps, and clearing memory are privileged instructions. You are able to read the time of day clock without being in kernel mode.
2. Multiprogramming allows the computer to be greater utilized. If the CPU is in idle, for example waiting for i/o, another job can be completed in the suspension time. Although there has to be multiple jobs lined up for multiprogramming to be utilized.
3. Multiplexing a resource allows the computer to be used by multiple users, or in other terms processes that are going on in the computer. Multiplexing a resource can happen in various was such as time multiplexing and space multiplexing. In time multiplexing, a device gets an allotted time to use a computer resource, so in effect it is sharing it with whatever other devices need to use the same resource. In space multiplexing, each device that needs a system resource is allocated an amount of the resource. Sharing a resource is basically like space multiplexing, each device gets a portion of the system resource.
4. 1 millionth of a second = 1 microsecond
5. 1 billion bytes = 1 Gigabyte
6. The caller needs to wait for the completion of the write as well, because other processes could depend on the data that is being written. It would be bad to have an unknown of whether or not the data was written correctly.
7. Out of the data structures available, linked list would not be the fastest one to be traversed. Because interrupt handles need to be accused very quickly, a data structure with a quick traversal is a better option.