

COS214 Tutorial 1

Roberto Togneri, 2000

1. What are the **main** functions of an operating system?
2. What is meant by the term *virtual machine*? What is the benefit of viewing a system such as an operating system as a set of layers? Why shouldn't an operating system be built as one large program?
3. Explain the terms *time-sharing* and *multi-programming*.
4. What is *spooling* and what are the benefits? Is it useful on a single-user system?
5. Which of the following instructions should be allowed only in kernel mode?
 - (a) Disable all interrupts.
 - (b) Read the time of day clock.
 - (c) Set the time of day clock.
 - (d) Change the memory map.
6. Why is the process table needed in a *timesharing* system? Is it also needed in personal computer systems in which only one process exists, that process taking over the entire machine until it is finished?
7. We have stressed the need for an operating system to make efficient use of the computing hardware. When is it appropriate for the operating system to forsake this principle and to "waste" resources? Why is such a system not really wasteful (even in a single-user system)?