

# 第 1 次作业

李子龙 518070910095

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**1.1** What are the three main purposes of an operating system?

答. 操作系统的三个目标:

**1.3** What is the main difficulty that a programmer must overcome in writing an operating system for a real-time environment?

**1.5** How does the distinction between kernel mode and user mode function as a rudimentary form of protection (security)?

**1.6** Which of the following instructions should be privileged?

- a. Set value of timer.
- b. Read the clock.
- c. Clear memory.
- d. Issue a trap instruction.
- e. Turn off interrupts.
- f. Modify entries in device-status table.
- g. Switch from user to kernel mode.
- h. Access I/O device.

**1.10** Give two reasons why caches are useful. What problems do they solve? What problems do they cause? If a cache can be made as large as the device for which it is caching (for instance, a cache as large as a disk), why not make it that large and eliminate the device?

**1.11** Distinguish between the client-server and peer-to-peer models of distributed systems.