

Midterm 2–April 6
Closed book section (64 points)

The exam is to be turned in at 1:50 pm. Work the closed book section first and turn it in before you consult your books and notes to work on the open book section. For the closed book section, write your answers on the exam itself. For the open book section, write your answers on separate pieces of paper.

University regulations require that you sign the following pledge on the first page of your turned-in exam.

I have neither received nor given any unauthorized aid on this exam. _____

Problem 1. (25 points–5 points each)

Give short definitions (one or two phrases or sentences) of the following terms.
context (of a process)

device driver

memory-mapped I/O

per process region table

shell

Problem 2. (20 points–5 points each)

Give a brief description of what the following UNIX system calls do at the user level. *You don't need to describe the implementation but say something about what they return.*

`execve(path, argv, envp)`

`fork()`

`signal(signum, function)`

`shmget(key, size, flag)`

Problem 3. (6 points)

Differentiate between the three kinds of user id's: real, effective, and saved.

Problem 4. (6 points)

Differentiate between the two kinds of device numbers: major and minor.

Problem 5. (1 points)

Name a patented feature of the Unix operating system.

Problem 6. (6 points)

Assuming pages are 1024 bytes long, make up a page table for accessing the logical addresses from 0 to 5764 and state the real address corresponding to logical address 2548.