

Name _____

All questions are worth 10 points. Maximum score: 80.

1. There are two different definitions for stack algorithms. What are they? Do stack algorithms suffer from Belady's anomaly? Why or why not?

2. Given the following reference string, show how many page faults would occur for the three algorithms FIFO, LRU, and OPT. Assume that you have three page frames.

1 2 3 4 3 2 1 2 1 2 1 3 4 1 2 1 2 3

3. Explain how a network service such as HTTP or Secure Shell is implemented in an operating system such as LINUX.
4. Explain how a boot-sector virus attacks a system. What are some precautions that should be taken to avoid boot-sector viruses?

5. How can we use a public-key system to transmit credit-card data securely from a user's computer to a central site? Why does it work?
6. You're working for company X as a computer technician. You discover that Employee Z has a list of everyone's passwords. What is the most likely method for obtaining such a list? How can you prevent this from recurring?

7. Describe the bully algorithm for selecting a coordinator in a distributed system.
8. Describe the priority-inversion problem that occurs in real-time systems.