

Name: \_\_\_\_\_ (First name first) Score: \_\_\_\_\_

**Open book.** You can consult **any** document you have **with you**, including those on your laptop.

1. Which features of UNIX let to the development of so many variants of it? (2×10 points)
  - UNIX was written in a high-level language.
  - Its source code was released.
2. What is the purpose of the set user ID bit? (20 points)
  - To let users execute an executable file using the rights of the owner of the file rather than their own rights.
3. What is the main disadvantage of using the valid bit to simulate an non-existing page-referenced bit (20 points)
  - Setting the bit back to one requires two context switches.
4. People often say that the UNIX file system is “device transparent.” What do they mean by that? (20 points)
  - All files and directories on a system form a single tree that crosses partition boundaries.

or

  - File pathnames do not contain any references to the disk partitions where the file resides.
5. Why did the designers of the UNIX Fast File System decide that its minimum page size would be 4 KB (and not 2KB or 8KB)? (20 points)
  - It is the smallest block size that allows to access 4GB of data with two levels of indirection.