Group A

1. Block special and character special files serve as easy-to-use interfaces to device drivers. They appear as normal files in the file system, allowing normal file system command to work on them, which in turn are actually issued to the device via driver. They can also serve as interface to data sinks, such as dev/null in UNIX. The difference between these types of special files is the type object they represent; block special files allow for handling of devices that lend to be handled as blocks (such as disks). Character special files are used as an interface to streaming devices (printer, modems, etc.).
2. A directory file is essentially a special file that serves as a parent to other files, so that they can be represented as a tree, with nested levels.

Group B

1. The purpose of a system call is to provide programmers with an abstraction that can be used to issue common commands in different contexts, much in the way special files work. System calls trap the kernel and invoke the operating system to provide services to programmers.
2. The call will return -1 in the event of an error.
3. 4,1,9,5
4. 55ms to get to position, .1s to read file, so 155ms to read file
5. A programmer will have to adapt his code to replace UNIX-specific calls with additional programming to perform the same task (the programmer will have to essentially create the equivalent call).
6. The biggest problem is that hardware is always going to be different and at some level you must directly interact with the machine, using specific code. The difference between machines is too great to have a truly portable operating system. The two layers in a portable operating system are the hardware-specific part and the abstract kernel. Leaning heavily on the abstract portion is the key to gaining portability.