A --

1. **a)** Currently, it is not possible to enable signal-driven I/O by specifying O_ASYNC when calling open(); use fcntl(2) to enable this flag.

   One must check for two different error codes, EISDIR and ENOENT, when trying to determine whether the kernel supports O_TMPFILE functionality.

   When both O_CREAT and O_DIRECTORY are specified in flags and the file specified by pathname does not exist, open() will create a regular file (i.e., O_DIRECTORY is ignored).
   b) <sys/types.h>, <sys/stat.h>, <fcntl.h>
   c) read(), write(), lseek()
   d) for read():

   Bugs:

   > According to POSIX.1-2008/SUSv4 Section XSI 2.9.7 ("Thread Interactions with Regular File Operations"):
   >
   > All of the following functions shall be atomic with respect to each other in the effects specified in POSIX.1-2008 when they operate on regular files or symbolic links: ...
   >
   > Among the APIs subsequently listed are read() and readv(2). And among the effects that should be atomic across threads (and processes) are updates of the file offset. However, on Linux before version 3.14, this was not the case: if two processes that share an open file description (see open(2)) perform a read() (or readv(2)) at the same time, then the I/O operations were not atomic with respect updating the file offset, with the result that the reads in the two processes might (incorrectly) overlap in the blocks of data that they obtained. This problem was fixed in Linux 3.14.

   Files to include:

   > <unistd.h>

2. **a)** <usb.h>

```
int             devnum;
char            devpath[16];
u32             route;
enum usb_device_state       state;
enum usb_device_speed       speed;
```

b) /include/uapi/linux/usb/ch9.h lines 1179 to 1186

```
enum usb_device_speed {
        USB_SPEED_UNKNOWN = 0,                      /* enumerating */
        USB_SPEED_LOW, USB_SPEED_FULL,              /* usb 1.1 */
        USB_SPEED_HIGH,                         /* usb 2.0 */
        USB_SPEED_WIRELESS,                     /* wireless (usb 2.5) */
        USB_SPEED_SUPER,                        /* usb 3.0 */
        USB_SPEED_SUPER_PLUS,                       /* usb 3.1 */
};
```