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1. A, c, d, e
2. Multiprogramming has several advantages: it allows CPU to always has one job to work on thus reduces the idle time of CPU and increases the utility of the CPU, it allows multiple users to share one OS.
3. The advantage of multiplexing is that users’ tasks can be completed faster thus users do not need to wait for too long.

Sharing a resource means the host who is using a resource has changed to another host.

Multiplexing a resource means multiple users can share a resource either in time (users take turns) or in space (each user gets a portion of the resource)

1. A million of a second is called microsecond.
2. A billion of bytes is called gigabytes
3. Whether the process has to be blocked depend on whether there is a write buffer:

If there is not a writer buffer for the driver, then yes, the process needs to be blocked.

If there is a writer buffer for the driver, then no, the process needn’t to be blocked.

Explanation: As user is trying to write a file, the data of content in transferred from process to data buffer then to disk. If the process isn’t blocked and there is no write buffer, the original data in the data buffer will overwritten if the user writes more to the same buffer. However, if a write buffer exists, the data previously written can be stored in the write buffer so that no data will be overwritten.

1. If the location of interrupt handlers is stored in a linked list, the OS will take much longer time to travels through the linked list. Therefore, the location is stored in a vector/array for the OS the process interrupts faster.