

Please write your answers in the boxes at the right.

1) Which type of system(s) support resource sharing (*select all correct answers*)?

- a) Batch systems
- b) Timesharing systems
- c) DOS systems
- d) Linux systems

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2) Which of the following are examples of space multiplexing (*select all correct answers*)?

- a) A file system on a floppy disk
- b) Data stored on a USB flash drive
- c) The execution of several threads in a single-core CPU
- d) The execution of two threads in a hyper-threaded CPU
- e) The allocation of memory (RAM) to user processes

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3) The purpose of resource abstractions provided by an operating systems is:

- a) To allow portability across different types of hardware
- b) To hide device-specific details of the underlying hardware
- c) To make the OS more visually appealing to users
- d) To provide system calls for application programmers

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4) Which of the following four actions occurs first when an application program makes a system call to start an I/O device?

- a) The context of the currently executing process is saved on the stack
- b) The CPU writes a device specific command to the device controller
- c) The OS writes the PSW to switch the CPU to User mode
- d) The TRAP instruction switches the CPU to Kernel mode

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5) Time-sharing systems evolved to allow multiple batch jobs to share a single CPU?

- a) True
- b) False

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Justification:

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*Note: provide a short justification for your answer only if you answer 'false'.*

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6) Which of the following hardware operation is not part of the basic cycle of every CPU?

- a) Decode
- b) Encode
- c) Execute
- d) Fetch

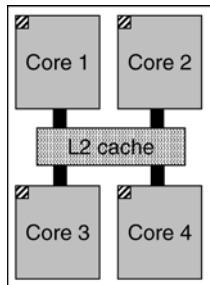
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figure 1

7) Consider a multi-core chip as shown in figure 1 above, and assume that it is currently executing two processes. Which one of the following statements is true?

- a) only one thread can actually be executed at a time
- b) the two threads are being hyper-threaded
- c) the two threads are executing in parallel
- d) the two threads share the four cores

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8) Which of the following is responsible for informing the CPU when a device has completed an I/O operation?

- a) bios
- b) device controller
- c) device driver
- d) interrupt controller
- e) interrupt handler

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9) Which of the following Unix-like systems uses a micro-kernel design?

- a) Linux
- b) Minix
- c) Multics
- d) Unix System V

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10) Which of the following Windows versions cannot run Win32 application?

- a) Windows 3.0
- b) Windows 95
- c) Windows ME
- d) Windows XP
- e) All the above can run Win32 applications

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