



## on Computer Organization

**Instructions:** For each question, choose the single best answer. Make your choice by clicking on its button. You can change your answers at any time. When the quiz is graded, the correct answers will appear in the box after each question.

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1. What is the name for a group of parallel conductors on the main circuit board over which data and signals flow?

- ☐ A. PCB
- ☒ B. bus
- ☐ C. system cable
- ☐ D. device controller

B

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2. In which of the following lists are devices arranged in order of **slowest** to **fastest** for data movement into and out of the processor?

- ☐ A. main memory, hard drive, floppy disk
- ☐ B. floppy disk, main memory, hard drive
- ☒ C. floppy disk, hard drive, main memory
- ☐ D. hard drive, main memory, floppy disk

C

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3. What is the name for an electronic module that responds to requests from the central processor, by sending device-specific control signals to an I/O device?

- ☐ A. bus handler
- ☐ B. I/O module

- ☐ C. virtual device
- ☒ D. device controller

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4. What is the main difference between the section of memory that holds instructions and the section of memory that holds data?

- ☐ A. Data memory is arranged into bytes with addresses; instruction memory holds words without addresses.
- ☒ B. There is no difference. All memory does is hold bit patterns. It is up to the rest of the computer system to determine what those patterns mean.
- ☐ C. Data memory is connected to the data bus. Instruction memory is connected to the instruction bus.
- ☐ D. Data uses virtual memory; instructions use physical memory.

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5. In most modern processors, what is the smallest addressable unit of memory?

- ☐ A. bit
- ☒ B. byte
- ☐ C. 32 bits
- ☐ D. 64 bits

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6. How many memory addresses are there with a 32-bit bus?

- ☒ A.  $2^{32}$
- ☐ B. 32
- ☐ C.  $32^2$
- ☐ D. This depends on how much memory has been installed in the computer.

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7. How many bits are in the addresses of the MIPS 32 chip, the processor that is the subject of this course?

- ☐ A. 16
- ☐ B. 24
- ☒ C. 32
- ☐ D. 64

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8. On a modern computer, the processor "sees" the full address space even though there is less installed memory than that. What is this full address space called?

- ☒ A. virtual memory
- ☐ B. apparent memory
- ☐ C. RAM
- ☐ D. physical memory

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9. How is the illusion of a full address space maintained on a modern computer?

- ☐ A. Addresses on the system bus are divided between disk storage and RAM memory.
- ☒ B. The operating system, with the help of special electronics, uses both physical memory and disk storage to implement the address space.
- ☐ C. Most programs use far less than the full address space, so they don't notice that only part of it is there.
- ☐ D. The processor divides time into very small slices and changes the contents of memory after each slice.

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10. What is **cache** memory?

- ☐ A. The part of the hard disk that lists its contents.
- ☐ B. The part of the hard disk used for virtual memory.
- ☐ C. Read-only memory that holds basic I/O instructions.
- ☒ D. Memory inside the processor chip that is used to speed up main memory access.

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The number you got right:

Percent Correct:

Letter Grade:



If you have returned here from another page, or have re-loaded this page, you will need to click again on each of your choices for the grading program to work correctly. You may want to press the SHIFT KEY while clicking to clear the old answers.