

## 2.7: Study Questions

### ? Study Question 2.7.1

Write your own description of what the term information systems hardware means.

#### Answer

Key ideas that should be in the answer: hardware consists of the physical components that people can see and touch.

### ? Study Question 2.7.2

Explain why Moore's Law may not be a valid theory in the next five years.

#### Answer

Compare two similar devices with one is two years older than the other. Discuss that computing doubles in speed every two years while devices get smaller, faster, and cheaper.

### ? Study Question 2.7.3

What is the CPU and how does it work?.

#### Answer

The CPU (Central Processing Unit) is the "brain" of a computer. It fetches instructions, decodes them, executes them, and stores results.

### ? Study Question 2.7.4

Explain why the personal computer is now considered a commodity.

#### Answer

They are carrying similar options with minor differentiation between computers. The users often choose by brands or price.

### ? Study Question 2.7.5

List the following in increasing order (slowest to fastest): megahertz, kilohertz, gigahertz

#### Answer

Kilohertz (kHz) Megahertz (MHz) Gigahertz (GHz). 1 kHz = 1,000 hertz; 1 MHz = 1,000,000 hertz; 1 GHz = 1,000,000,000 hertz

So kilohertz is the smallest unit referring to thousands of hertz. Megahertz is larger, referring to millions of hertz. Gigahertz is the largest unit, referring to billions of hertz.

### ? Study Question 2.7.6

What are the differences between HDD and SSD?

#### Answer

HDD (Hard Disk Drive) uses spinning disks to read/write data, while SSD (Solid State Drive) uses flash memory, faster performance, and has no moving parts.

### ? Study Question 2.7.7

Why are desktops declining in popularity?

#### Answer

Many reasons, including the popularity and increasing power of mobile devices.

### ? Study Question 2.7.8

What does the acronym RAM stand for?

#### Answer

Random Access Memory.

### ? Study Question 2.7.9

List three things that can be considered IoT.

#### Answer

Cars, machines, home appliances, and wearables to be internet-connected and share data.

## 2.7.1: Exercises

1. Review the sidebar on the binary number system. How would you represent the number 16 in binary? How about the number 100? Besides decimal and binary, other number bases are used in computing and programming. One of the most used bases is hexadecimal, which is base-16. In base-16, the numerals 0 through 9 are supplemented with the letters A (10) through F (15). How would you represent the decimal number 100 in hexadecimal? Show your work
2. Go to Old-Computer.com - Pick one computer from the listing and write a brief summary. Include the specifications for CPU, memory, and screen size. Now find the specifications of a computer being offered for sale today and compare. Did Moore's Law hold?
3. Under the category of IoT, pick two products and explain how IoT has changed the product. Review the price before and after the technology was introduced. Has this new technology increased popularity for the item?
4. Go on the web and compare and contrast two smartphones on the market. Is one better than the other, and if so, why. Be sure to include the price.
5. Review the e-waste policies in your area. Do you feel they are helping or ignoring this growing crisis?

6. Now find at least two more scholarly articles on this topic. Prepare a PowerPoint of at least 10 slides that summarize the issue and recommend a possible solution based on your research.
7. As with any technology text, there have been advances in technologies since publication. What technology that has been developed recently would you add to this chapter?
8. What is the current state of solid-state drives vs. hard disks? Describe the ideal user for each. Do original research online where you can compare prices on solid-state drives and hard disks. Be sure you note the differences in price, capacity, and speed.
9. What does a motherboard do? Name two important components that connect directly to the motherboard.

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