Chapter 2:

Hardware Basics: Inside the Box

## Multiple Choice:

1. Processing information involves:
   1. accepting information from the outside world.
   2. communication with another computer.
   3. performing arithmetic or logical operations on information that is input.
   4. All of these answers are forms of processing information.

**Answer:** C **Reference:** What Computers Do **Difficulty:** Moderate

1. Producing output involves:
   1. accepting information from the outside world.
   2. communication with another computer.
   3. moving and storing information.
   4. communicating information to the outside world.

**Answer:** D **Reference:** What Computers Do **Difficulty:** Moderate

1. Hardware components are:
   1. physical parts of a computer system.
   2. fully functional without computer software.
   3. impossible to add on after the initial purchase of a computer.
   4. the intangible parts of a computer system.

**Answer:** A **Reference:** What Computers Do **Difficulty:** Moderate

1. The most common input devices include:
   1. monitors and keyboards.
   2. monitors and mice.
   3. mice and keyboards.
   4. printer and mice.

**Answer:** C **Reference:** What Computers Do **Difficulty:** Easy

1. The primary output device for computers is a:
   1. video monitor.
   2. printer.
   3. keyboard.
   4. mouse.

**Answer:** A **Reference:** What Computers Do **Difficulty:** Easy

1. The hardware device commonly referred to as the “brain” of the computer is the:
   1. RAM chip.
   2. data input.
   3. CPU.
   4. secondary storage.

**Answer:** C **Reference:** What Computers Do **Difficulty:** Moderate

1. CPU stands for:
   1. central production unit.
   2. central processing unit.
   3. computer processing unit.
   4. computer primary unit.

**Answer:** B **Reference:** What Computers Do **Difficulty:** Moderate

1. The CPU is also known as the:
   1. microprocessor.
   2. random access memory.
   3. primary storage.
   4. microunit.

**Answer:** A **Reference:** What Computers Do **Difficulty:** Easy

1. The primary difference between RAM and secondary storage devices is:
   1. the length of time data is stored.
   2. RAM is permanent and secondary storage is temporary.
   3. RAM accepts input; secondary storage devices do not.
   4. the way data is stored to them.

**Answer:** A **Reference:** What Computers Do **Difficulty:** Challenging

1. RAM is also known as:
   1. secondary storage.
   2. the central processing unit.
   3. the “brain” of the computer.
   4. primary storage.

**Answer:** D **Reference:** What Computers Do **Difficulty:** Moderate

1. If a user needs information instantly available to the CPU, it should be stored:
   1. in the CPU.
   2. in RAM.
   3. in secondary storage.
   4. on a CD.

**Answer:** B **Reference:** What Computers Do **Difficulty:** Moderate

1. Storage devices include all of the following EXCEPT:
   1. a recordable CD.
   2. RAM.
   3. a hard drive.
   4. a DVD drive.

**Answer:** B **Reference:** What Computers Do **Difficulty:** Moderate

1. The input, output, and storage devices are known as:
   1. peripheral devices.
   2. secondary storage devices.
   3. firmware.
   4. hardware drivers.

**Answer:** A **Reference:** What Computers Do **Difficulty:** Moderate

1. Digital means that computer information is discrete and countable, subdivided into:
   1. digits.
   2. analog units.
   3. input.
   4. bytes.

**Answer:** A **Reference:** Bit Basics **Difficulty:** Easy

1. The smallest unit of information a computer can understand and process is known as a:
   1. digit.
   2. byte.
   3. bit.
   4. kilobyte.

**Answer:** C **Reference:** Bit Basics **Difficulty:** Moderate

1. A bit can have two values:
   1. bit and byte.
   2. 0 and 1.
   3. 2 and 4.
   4. 1 and 2.

**Answer:** B **Reference:** Bit Basics **Difficulty:** Moderate

1. Binary means:
   1. there are two possibilities: on and off.
   2. the same as a byte: 8 bits.
   3. there are three options: 0, 1, and 2.
   4. that computers really need to have three or more options.

**Answer:** A **Reference:** Bit Basics **Difficulty:** Easy

1. A group of 8 bits is known as a:
   1. kilobyte.
   2. binary digit.
   3. byte.
   4. megabit.

**Answer:** C **Reference:** Bit Basics **Difficulty:** Moderate

1. The binary system uses the power of:
   1. 10.
   2. 4.
   3. 256.
   4. 2.

**Answer:** D **Reference:** How It Works 2.1: Binary Numbers **Difficulty:** Easy

1. A byte can represent any number between 0 and:
   1. 2.
   2. 255.
   3. 256.
   4. 1024.

**Answer:** B **Reference:** How It Works 2.1: Binary Numbers **Difficulty:** Challenging

1. The most widely used code that represents each character as a unique 8-bit code is:
   1. ASCII.
   2. Unicode.
   3. binary numbering system.
   4. EBCDIC.

**Answer:** A **Reference:** Bits as Codes **Difficulty:** Moderate

1. ASCII stands for:
   1. American Standard Code for Information Interface.
   2. American Standard Computer Interface Internet.
   3. American Standard Code for Information Interchange.
   4. Advanced Standard Code for Interface Interchange.

**Answer:** C **Reference:** Bits as Codes **Difficulty:** Challenging

1. In ASCII, \_\_\_\_\_\_\_\_\_\_\_\_ characters can be created.
   1. 255
   2. 1,024
   3. 256
   4. 128

**Answer:** C **Reference:** Bits as Codes **Difficulty:** Challenging

1. An advanced coding scheme that incorporates Chinese, Greek, Hebrew, and Japanese is known as:
   1. ASCII.
   2. World wide interchange (WWI).
   3. Worldcode.
   4. Unicode.

**Answer:** D **Reference:** Bits as Codes **Difficulty:** Challenging

1. 1,024 bytes of data is a:
   1. megabyte.
   2. kilobyte.
   3. gigabyte.
   4. terabyte.

**Answer:** B **Reference:** Bits, Bytes, and Buzzwords **Difficulty:** Easy

1. Approximately 1,000 megabytes is a:
   1. terabyte.
   2. kilobyte.
   3. petabyte.
   4. gigabyte.

**Answer:** D **Reference:** Bits, Bytes, and Buzzwords **Difficulty:** Moderate

1. The largest storage devices commonly available today are able to store:
   1. kilobytes.
   2. terabytes.
   3. gigabytes.
   4. petabytes.

**Answer:** B **Reference:** Bits, Bytes, and Buzzwords **Difficulty:** Challenging

1. The unit that transforms input into output is known as the:
   1. RAM chip.
   2. BIOS chip.
   3. CPU.
   4. motherboard.

**Answer:** C **Reference:** The CPU: The Real Computer **Difficulty:** Moderate

1. The motherboard is the:
   1. circuit board that contains a CPU and other chips.
   2. circuit board that houses peripheral devices.
   3. same as the CPU chip.
   4. the first chip that is accessed when the computer is turned on.

**Answer:** A **Reference:** The CPU: The Real Computer **Difficulty:** Moderate

1. Backward compatibility means that:
   1. a Pentium 4 chip can handle processing previously done by a Pentium III.
   2. all hardware will work will other hardware.
   3. a mouse will work with more advanced hardware that comes out after the date the mouse was produced.
   4. all software will work on all other computer systems.

**Answer:** A **Reference:** Compatibility **Difficulty:** Moderate

1. Linux is a(n):
   1. computer system.
   2. operating system.
   3. piece of application software.
   4. type of CPU device.

**Answer:** B **Reference:** Compatibility **Difficulty:** Challenging

1. The clock of a computer system is the:
   1. software that shows the time on the taskbar.
   2. timing device that processes all instructions input into the computer.
   3. timing device that produces electrical pulses to synchronize the computer’s operations.
   4. device that is the newest and most modern in a computer system.

**Answer:** C **Reference:** Performance **Difficulty:** Moderate

1. A computer’s clock speed is measured in:
   1. gigabytes.
   2. bits.
   3. megahertz.
   4. gigahertz.

**Answer:** D **Reference:** Performance **Difficulty:** Challenging

1. The word size of a typical PC’s CPU is:
   1. 1 or 2 bytes.
   2. 32 or 64 bits.
   3. 32 or 64 bytes.
   4. 8 or 16 bits.

**Answer:** B **Reference:** Performance **Difficulty:** Challenging

1. The \_\_\_\_\_\_\_\_\_\_\_\_, by Intel, is a 64-bit processor.
   1. Pentium
   2. Athlon
   3. Itanium
   4. Celeron

**Answer:** C **Reference:** Performance **Difficulty:** Challenging

1. When two processors are employed in a computer, it is known as:
   1. double processing.
   2. parallel processing.
   3. CPU duplicate processing.
   4. clustering.

**Answer:** B **Reference:** Performance **Difficulty:** Moderate

1. Units that work together in the CPU include all EXCEPT:
   1. the ALU.
   2. the prefetch unit.
   3. the decode unit.
   4. RAM.

**Answer:** D **Reference:** How It Works 2.3: The CPU **Difficulty:** Challenging

1. The CPU’s ALU contains:
   1. RAM spaces.
   2. registers.
   3. byte spaces.
   4. secondary storage space.

**Answer:** B **Reference:** How It Works 2.3: The CPU **Difficulty:** Challenging

1. The part of the CPU that instructs the bus unit to read instructions stored at a certain memory address is known as the:
   1. bus device.
   2. prefetch unit.
   3. decode unit.
   4. writeback.

**Answer:** B **Reference:** How It Works 2.3: The CPU **Difficulty:** Challenging

1. The storage area for the next likely data or instruction to be processed, preventing bottlenecks and slowing of the system, is known as:
   1. cache.
   2. the register.
   3. RAM.
   4. the CPU.

**Answer:** A **Reference:** How It Works 2.3: The CPU **Difficulty:** Challenging

1. RAM stands for:
   1. Random Access Memory.
   2. Readily Accessible Memory.
   3. Randomly Accessible Memory.
   4. Read Access and Memorize.

**Answer:** A **Reference:** The Computer’s Memory **Difficulty:** Easy

1. Information stored in RAM is considered volatile, which means it is:
   1. stored there permanently.
   2. not held permanently, only temporarily.
   3. stored when the electricity is shut off.
   4. stored permanently in the CPU device.

**Answer:** B **Reference:** The Computer’s Memory **Difficulty:** Moderate

1. The memory that stores the computer’s date, time, and calendar is the:
   1. RAM.
   2. flash memory.
   3. register.
   4. CMOS.

**Answer:** D **Reference:** The Computer’s Memory **Difficulty:** Moderate

1. The time for the processor to retrieve data from memory is measured in:
   1. megabits.
   2. nanoseconds.
   3. milliseconds.
   4. megabytes.

**Answer:** B **Reference:** The Computer’s Memory **Difficulty:** Challenging

1. The circuit board that contains RAM chips is known as a:
   1. CMOS.
   2. ROM.
   3. SIMM.
   4. RAM board.

**Answer:** C **Reference:** How It Works 2.4: Memory **Difficulty:** Moderate

1. The permanently etched program in ROM that automatically begins executing the computer’s instructions is the:
   1. BIOS.
   2. ROM.
   3. CMOS.
   4. RAM.

**Answer:** A **Reference:** How It Works 2.4: Memory **Difficulty:** Challenging

1. The groups of wires that transfer data are known as the:
   1. CPU.
   2. system clock.
   3. system buses.
   4. CMOS.

**Answer:** C **Reference:** Buses, Ports, and Peripherals **Difficulty:** Easy

1. Expansion cards are inserted into:
   1. slots.
   2. peripheral devices.
   3. the CPU.
   4. the back of the computer.

**Answer:** A **Reference:** Buses, Ports, and Peripherals **Difficulty:** Moderate

1. External devices such as printers, keyboards, and modems are known as:
   1. add-on devices.
   2. peripherals.
   3. extra hardware devices.
   4. PC expansion slot add-ons.

**Answer:** B **Reference:** Working Wisdom: Green Computing **Difficulty:** Easy

## Fill in the Blank:

1. The first function that computers perform is to receive \_\_\_\_\_\_\_\_\_\_\_\_ or information from the outside world.

**Answer:** input **Reference:** What Computers Do **Difficulty:** Easy

1. The physical components of a computer system are known as \_\_\_\_\_\_\_\_\_\_\_\_.

**Answer:** hardware **Reference:** What Computers Do **Difficulty:** Easy

1. A printer and a monitor are the most common \_\_\_\_\_\_\_\_\_\_\_\_ devices.

**Answer:** output **Reference:** What Computers Do **Difficulty:** Easy

1. Data that must be immediately available for processing in the CPU must be stored in \_\_\_\_\_\_\_\_\_\_\_\_.

**Answer:** RAM or memory **Reference:** What Computers Do **Difficulty:** Moderate

1. Hard disk drives, DVD drives, and floppy drives are all forms of \_\_\_\_\_\_\_\_\_\_\_\_ storage.

**Answer:** secondary or permanent **Reference:** What Computers Do **Difficulty:** Moderate

1. The keyboard, monitor, and a DVD drive are known as \_\_\_\_\_\_\_\_\_\_\_.

**Answer:** peripherals **Reference:** What Computers Do **Difficulty:** Moderate

1. A computer system is not complete without \_\_\_\_\_\_\_\_\_\_\_\_, which tells the hardware what to do.

**Answer:** software **Reference:** What Computers Do **Difficulty:** Moderate

1. A(n) \_\_\_\_\_\_\_\_\_\_\_\_ is a binary digit.

**Answer:** bit **Reference:** Bit Basics **Difficulty:** Moderate

1. A program that runs on a(n) \_\_\_\_\_\_\_\_\_\_\_\_ operating system cannot run on Windows.

**Answer:** Linux **Reference:** Compatibility **Difficulty:** Moderate

1. Eight bits are called a(n) \_\_\_\_\_\_\_\_\_\_\_\_.

**Answer:** byte **Reference:** Bit Basics **Difficulty:** Easy

1. The most widely used code of computer systems is \_\_\_\_\_\_\_\_\_\_\_\_.

**Answer:** ASCII **Reference:** Bits as Codes **Difficulty:** Moderate

1. GB stands for \_\_\_\_\_\_\_\_\_\_\_\_.

**Answer:** gigabyte **Reference:** Bits, Bytes, and Buzzwords **Difficulty:** Easy

1. Data transfer speed is measured in \_\_\_\_\_\_\_\_\_\_\_.

**Answer:** megabits **Reference:** Bits, Bytes, and Buzzwords **Difficulty:** Challenging

1. The CPU, all additional chips, and the electronic circuitry are all housed on the \_\_\_\_\_\_\_\_\_\_\_\_.

**Answer:** motherboard **Reference:** The CPU: The Real Computer **Difficulty:** Moderate

1. Gigahertz is a measure of the computer’s clock speed and is measured in \_\_\_\_\_\_\_\_\_\_\_\_ of clock cycles per second.

**Answer:** billions **Reference:** Performance **Difficulty:** Challenging

1. The number of bits a CPU can process simultaneously is the CPU’s \_\_\_\_\_\_\_\_\_\_\_\_.

**Answer:** word size **Reference:** Performance **Difficulty:** Challenging

1. SIMM stands for \_\_\_\_\_\_\_\_\_\_\_.

**Answer:** single in-line memory module **Reference:** The Computer’s Memory **Difficulty:** Easy

1. Computer memory or primary memory is also known as \_\_\_\_\_\_\_\_\_\_\_\_.

**Answer:** RAM **Reference:** The Computer’s Memory **Difficulty:** Easy

1. \_\_\_\_\_\_\_\_\_\_\_ memory is nonvolatile and often used in digital cameras and cell phones.

**Answer:** Flash **Reference:** The Computer’s Memory **Difficulty:** Challenging

1. Nonvolatile memory, etched at the factory, is called \_\_\_\_\_\_\_\_\_\_\_\_.

**Answer:** ROM **Reference:** The Computer’s Memory **Difficulty:** Moderate

1. The wire groups that transfer data between components on the motherboard are known as the \_\_\_\_\_\_\_\_\_\_\_\_.

**Answer:** buses or system buses **Reference:** Buses, Ports, and Peripherals **Difficulty:** Moderate

1. Sockets on the outside of the computer, often in the back, into which you can plug peripherals are the \_\_\_\_\_\_\_\_\_\_\_\_ of the computer system.

**Answer:** ports **Reference:** Buses, Ports, and Peripherals **Difficulty:** Moderate

## Matching:

1. Match the following terms to their meanings:

I. bus A. area in the computer box for disk drives or other devices

II. bay B. printer, scanner, or mouse, for example

III. expansion card C. wires that move data from one component to another

IV. port D. location to insert a PC card, for example

V. expansion slot E. adds an additional feature to a computer system

VI. peripheral F. socket on the outside of the computer

**Answers:** C, A, E, F, D, B **Reference:** How It Works 2.1: Binary Numbers **Difficulty:** Easy

1. Match the following terms to their meanings:

I. RAM A. memory chips on small circuit boards, double-sided

II. CMOS B. similar to RAM but nonvolatile

III. DIMM C. low-energy, battery powered memory

IV. ROM D. memory chips on small circuit boards, single-sided

V. BIOS E. firmware programs in ROM

VI. flash memory F. primary memory

VII. SIMM G. nonvolatile memory

**Answers:** F, C, A, G, E, B, D **Reference:** How It Works 2.4: Memory **Difficulty:** Moderate

1. Match the following terms to their meanings:

I. ALU A. 32 or 64 bit storage for the ALU

II. register B. memory which is faster than RAM

III. prefetch unit C. 32 or 64 bits processed simultaneously

IV. cache D. part of the CPU where instructions are performed

V. word size E. translates an instruction

VI. decode unit F. retrieves an instruction

VII. clock G. timing device

**Answers:** D, A, F, B, C, E, G **Reference:** How It Works 2.3: The CPU **Difficulty:** Moderate