CHAPTER 2:
HARDWARE BASICS: INSIDE THE BOX

Multiple Choice:

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

   Answer: C  Reference: What Computers Do  Difficulty: Moderate

2. Producing output involves:
   A. accepting information from the outside world.
   B. communication with another computer.
   C. moving and storing information.
   D. communicating information to the outside world.

   Answer: D  Reference: What Computers Do  Difficulty: Moderate

3. Hardware components are:
   A. physical parts of a computer system.
   B. fully functional without computer software.
   C. impossible to add on after the initial purchase of a computer.
   D. the intangible parts of a computer system.

   Answer: A  Reference: What Computers Do  Difficulty: Moderate
4. The most common input devices include:
   A. monitors and keyboards.
   B. monitors and mice.
   C. mice and keyboards.
   D. printer and mice.

Answer: C  Reference: What Computers Do  Difficulty: Easy

5. The primary output device for computers is a:
   A. video monitor.
   B. printer.
   C. keyboard.
   D. mouse.

Answer: A  Reference: What Computers Do  Difficulty: Easy

6. The hardware device commonly referred to as the “brain” of the computer is the:
   A. RAM chip.
   B. data input.
   C. CPU.
   D. secondary storage.

Answer: C  Reference: What Computers Do  Difficulty: Moderate

7. CPU stands for:
   A. central production unit.
   B. central processing unit.
   C. computer processing unit.
   D. computer primary unit.

Answer: B  Reference: What Computers Do  Difficulty: Moderate
8. The CPU is also known as the:
   A. microprocessor.
   B. random access memory.
   C. primary storage.
   D. microunit.

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

9. The primary difference between RAM and secondary storage devices is:
   A. the length of time data is stored.
   B. RAM is permanent and secondary storage is temporary.
   C. RAM accepts input; secondary storage devices do not.
   D. the way data is stored to them.

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

10. RAM is also known as:
    A. secondary storage.
    B. the central processing unit.
    C. the “brain” of the computer.
    D. primary storage.

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

11. If a user needs information instantly available to the CPU, it should be stored:
    A. in the CPU.
    B. in RAM.
    C. in secondary storage.
    D. on a CD.

    **Answer: B**  **Reference: What Computers Do**  **Difficulty: Moderate**
12. Storage devices include all of the following EXCEPT:
   A. a recordable CD.
   B. RAM.
   C. a hard drive.
   D. a DVD drive.
   **Answer:** B  **Reference:** What Computers Do  **Difficulty:** Moderate

13. The input, output, and storage devices are known as:
   A. peripheral devices.
   B. secondary storage devices.
   C. firmware.
   D. hardware drivers.
   **Answer:** A  **Reference:** What Computers Do  **Difficulty:** Moderate

14. Digital means that computer information is discrete and countable, subdivided into:
   A. digits.
   B. analog units.
   C. input.
   D. bytes.
   **Answer:** A  **Reference:** Bit Basics  **Difficulty:** Easy

15. The smallest unit of information a computer can understand and process is known as a:
   A. digit.
   B. byte.
   C. bit.
   D. kilobyte.
   **Answer:** C  **Reference:** Bit Basics  **Difficulty:** Moderate
16. A bit can have two values:
   A. bit and byte.
   B. 0 and 1.
   C. 2 and 4.
   D. 1 and 2.

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

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

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

18. A group of 8 bits is known as a:
   A. kilobyte.
   B. binary digit.
   C. byte.
   D. megabit.

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

19. The binary system uses the power of:
   A. 10.
   B. 4.
   C. 256.
   D. 2.

   **Answer:** D   **Reference:** How It Works 2.1: Binary Numbers   **Difficulty:** Easy
Chapter 2: Hardware Basics: Inside the Box

20. A byte can represent any number between 0 and:
   A. 2.
   B. 255.
   C. 256.
   D. 1024.
   **Answer:** B  **Reference:** How It Works 2.1: Binary Numbers  **Difficulty:** Challenging

21. The most widely used code that represents each character as a unique 8-bit code is:
   A. ASCII.
   B. Unicode.
   C. binary numbering system.
   D. EBCDIC.
   **Answer:** A  **Reference:** Bits as Codes  **Difficulty:** Moderate

22. ASCII stands for:
   A. American Standard Code for Information Interface.
   B. American Standard Computer Interface Internet.
   C. American Standard Code for Information Interchange.
   **Answer:** C  **Reference:** Bits as Codes  **Difficulty:** Challenging

23. In ASCII, __________ characters can be created.
   A. 255
   B. 1,024
   C. 256
   D. 128
   **Answer:** C  **Reference:** Bits as Codes  **Difficulty:** Challenging
24. An advanced coding scheme that incorporates Chinese, Greek, Hebrew, and Japanese is known as:
   A. ASCII.
   B. World wide interchange (WWI).
   C. Worldcode.
   D. Unicode.
   **Answer: D**  **Reference: Bits as Codes**  **Difficulty: Challenging**

25. 1,024 bytes of data is a:
   A. megabyte.
   B. kilobyte.
   C. gigabyte.
   D. terabyte.
   **Answer: B**  **Reference: Bits, Bytes, and Buzzwords**  **Difficulty: Easy**

26. Approximately 1,000 megabytes is a:
   A. terabyte.
   B. kilobyte.
   C. petabyte.
   D. gigabyte.
   **Answer: D**  **Reference: Bits, Bytes, and Buzzwords**  **Difficulty: Moderate**

27. The largest storage devices commonly available today are able to store:
   A. kilobytes.
   B. terabytes.
   C. gigabytes.
   D. petabytes.
   **Answer: B**  **Reference: Bits, Bytes, and Buzzwords**  **Difficulty: Challenging**
28. The unit that transforms input into output is known as the:
   A. RAM chip.
   B. BIOS chip.
   C. CPU.
   D. motherboard.

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

29. The motherboard is the:
   A. circuit board that contains a CPU and other chips.
   B. circuit board that houses peripheral devices.
   C. same as the CPU chip.
   D. the first chip that is accessed when the computer is turned on.

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

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

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

31. Linux is a(n):
   A. computer system.
   B. operating system.
   C. piece of application software.
   D. type of CPU device.

   **Answer:** B  **Reference:** Compatibility  **Difficulty:** Challenging
32. The clock of a computer system is the:
   A. software that shows the time on the taskbar.
   B. timing device that processes all instructions input into the computer.
   C. timing device that produces electrical pulses to synchronize the computer’s operations.
   D. device that is the newest and most modern in a computer system.

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

33. A computer’s clock speed is measured in:
   A. gigabytes.
   B. bits.
   C. megahertz.
   D. gigahertz.

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

34. The word size of a typical PC’s CPU is:
   A. 1 or 2 bytes.
   B. 32 or 64 bits.
   C. 32 or 64 bytes.
   D. 8 or 16 bits.

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

35. The ___________, by Intel, is a 64-bit processor.
   A. Pentium
   B. Athlon
   C. Itanium
   D. Celeron

   **Answer:** C      **Reference:** Performance      **Difficulty:** Challenging
36. When two processors are employed in a computer, it is known as:
   
   A. double processing.
   
   B. parallel processing.
   
   C. CPU duplicate processing.
   
   D. clustering.

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

37. By putting multiple CPUs on a single chip, chip makers have created:
   
   A. parallel processors.
   
   B. multi-core processors.
   
   C. CPU duplicate processors.
   
   D. clusters.

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

38. Units that work together in the CPU include all EXCEPT:
   
   A. the ALU.
   
   B. the prefetch unit.
   
   C. the decode unit.
   
   D. RAM.

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

39. The CPU’s ALU contains:
   
   A. RAM spaces.
   
   B. registers.
   
   C. byte spaces.
   
   D. secondary storage space.

   **Answer:** B  **Reference:** How It Works 2.3: The CPU  **Difficulty:** Challenging
40. The part of the CPU that instructs the bus unit to read instructions stored at a certain memory address is known as the:
   A. bus device.
   B. prefetch unit.
   C. decode unit.
   D. writeback.

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

41. The storage area for the next likely data or instruction to be processed, preventing bottlenecks and slowing of the system, is known as:
   A. cache.
   B. the register.
   C. RAM.
   D. the CPU.

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

42. Popular CPU families including Celeron, Centrino, and Xeon belong to which family:
   A. IBM.
   B. Pentium.
   C. Microsoft.
   D. Macintosh.

   **Answer:** B  **Reference:** Popular CPU Families and Where to Find Them  **Difficulty:** Challenging

43. RAM stands for:
   A. random access memory.
   B. readily accessible memory.
   C. randomly accessible memory.
   D. read access and memorize.

   **Answer:** A  **Reference:** The Computer’s Memory  **Difficulty:** Easy
44. Information stored in RAM is considered volatile, which means it is:
   A. stored there permanently.
   B. not held permanently, only temporarily.
   C. stored when the electricity is shut off.
   D. stored permanently in the CPU device.

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

45. The memory that stores the computer’s date, time, and calendar is the:
   A. RAM.
   B. flash memory.
   C. register.
   D. CMOS.

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

46. The time for the processor to retrieve data from memory is measured in:
   A. megabits.
   B. nanoseconds.
   C. milliseconds.
   D. megabytes.

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

47. The circuit board that contains RAM chips is known as a:
   A. CMOS.
   B. ROM.
   C. SIMM.
   D. RAM board.

   **Answer:** C  **Reference:** How It Works 2.4: Memory  **Difficulty:** Moderate
48. The permanently etched program in ROM that automatically begins executing the computer’s instructions is the:

A. BIOS.
B. ROM.
C. CMOS.
D. RAM.

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

49. The groups of wires that transfer data are known as the:

A. CPU.
B. system clock.
C. system buses.
D. CMOS.

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

50. Expansion cards are inserted into:

A. slots.
B. peripheral devices.
C. the CPU.
D. the back of the computer.

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

51. External devices such as printers, keyboards, and modems are known as:

A. add-on devices.
B. peripherals.
C. extra hardware devices.
D. PC expansion slot add-ons.

Answer: B  Reference: Buses, Ports, and Peripherals  Difficulty: Easy
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Fill in the Blank:

52. The first function that computers perform is to receive __________ or information from the outside world.

Answer: input  
Reference: What Computers Do  
Difficulty: Easy

53. The physical components of a computer system are known as __________.

Answer: hardware  
Reference: What Computers Do  
Difficulty: Easy

54. A printer and a monitor are the most common __________ devices.

Answer: output  
Reference: What Computers Do  
Difficulty: Easy

55. 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

56. Hard disk drives, DVD drives, and floppy drives are all forms of __________ storage.

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

57. The keyboard, monitor, and a DVD drive are known as __________.

Answer: peripherals  
Reference: What Computers Do  
Difficulty: Moderate

58. A computer system is not complete without __________, which tells the hardware what to do.

Answer: software  
Reference: What Computers Do  
Difficulty: Moderate

59. A(n) __________ is a binary digit.

Answer: bit  
Reference: Bit Basics  
Difficulty: Moderate

60. A program that runs on a(n) __________ operating system cannot run on Windows.

Answer: Linux  
Reference: Compatibility  
Difficulty: Moderate

61. Eight bits are called a(n) __________.

Answer: byte  
Reference: Bit Basics  
Difficulty: Easy

62. The most widely used code of computer systems is __________.

Answer: ASCII  
Reference: Bits as Codes  
Difficulty: Moderate

63. GB stands for __________.

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

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64. Data transfer speed is measured in ___________.

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

65. The CPU, all additional chips, and the electronic circuitry are all housed on the ____________.

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

66. Gigahertz is a measure of the computer’s clock speed and is a measure of ____________ of clock cycles per second.

   Answer: billions   Reference: Performance   Difficulty: Challenging

67. The number of bits a CPU can process simultaneously is the CPU’s ____________.

   Answer: word size   Reference: Performance   Difficulty: Challenging

68. SIMM stands for ____________.

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

69. Computer memory or primary memory is also known as ____________.

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

70. ____________ memory is nonvolatile and often used in digital cameras and cell phones.

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

71. Nonvolatile memory, etched at the factory, is called ____________.

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

72. 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

73. 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:

74. 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: Buses, Ports, and Peripherals  
Difficulty: Easy

75. 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: The Computer’s Memory  
Difficulty: Moderate
76. 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: The Computer’s Core: CPU and Memory

Difficulty: Moderate