

Appendix A - Information Systems Hardware

1) A critical part of the system unit is called the:

- A) character parsing unit.
- B) control program unit.
- C) computer processing unit.
- D) central processing unit.

Answer: D

Page Ref: 343

Skill: R

2) _____ devices transform inputs into outputs.

- A) Processing
- B) Internet
- C) Input
- D) Output

Answer: A

Page Ref: 343

Skill: R

3) A keyboard is best associated with which information category?

- A) Selecting and pointing
- B) Entering audio and video
- C) Entering original text/numbers
- D) Entering batch data

Answer: C

Page Ref: 343

Skill: A

4) A mouse is best associated with which information category?

- A) Entering batch data
- B) Entering audio and video
- C) Entering original text/numbers
- D) Selecting and pointing

Answer: D

Page Ref: 344

Skill: A

5) MIDI is best associated with which information category?

- A) Entering audio and video
- B) Entering batch data
- C) Entering original text/numbers
- D) Selecting and pointing

Answer: A

Page Ref: 347

Skill: A

- 6) _____ refers to the design of computer hardware and work environments that minimize health risks such as repetitive stress injuries.
- A) E-therapy
 - B) Kinesiology
 - C) Telemedicine
 - D) Ergonomics

Answer: D

Page Ref: 344

Skill: R

- 7) Text recognition software:
- A) reads text as audible speech.
 - B) converts handwritten text into characters (as if typed on a keyboard).
 - C) analyzes handwriting and identifies forgeries.
 - D) converts speech into text.

Answer: B

Page Ref: 345

Skill: A

- 8) _____ convert(s) printed text and images into digital data.
- A) Digitizers
 - B) Scanners
 - C) Batch processing
 - D) Ergonomics

Answer: B

Page Ref: 344

Skill: A

- 9) _____ are a special type of credit card with a magnetic strip, a microprocessing chip, and memory circuits.
- A) Disc-cards
 - B) Intellisense cards
 - C) Smart cards
 - D) Scanners

Answer: C

Page Ref: 346

Skill: R

- 10) A _____ is a pointing device that works by placing a pen-like device near a computer screen. Selections are made by pressing the pen to the screen.
- A) light pen
 - B) trackball
 - C) joystick
 - D) mouse

Answer: A

Page Ref: 345

Skill: R

11) A _____ is a pointing device that works by rolling a ball that sits in a holder. Selections are made by pressing buttons located near or on the holder.

- A) joystick
- B) trackball
- C) light pen
- D) mouse

Answer: B

Page Ref: 345

Skill: R

12) This type of scanner is used by the banking industry to read data, account numbers, bank codes, and check numbers on preprinted checks.

- A) Bar code/optical character readers
- B) Optical mark recognition (OMR)
- C) Optical character recognition (OCR)
- D) Magnetic ink character recognition (MICR)

Answer: D

Page Ref: 346

Skill: A

13) This type of scanner is used to scan questionnaires and test answer forms where answer choices are circled or blocked in, using pencil or pen.

- A) Bar code/optical character readers
- B) Magnetic ink character recognition (MICR)
- C) Optical mark recognition (OMR)
- D) Optical character recognition (OCR)

Answer: C

Page Ref: 346

Skill: A

14) A process called _____ makes it possible for your computer to digitize spoken words and display them on the computer monitor.

- A) file transfer protocol
- B) Internet Relay Chat (IRC)
- C) Small Talk
- D) speech recognition

Answer: D

Page Ref: 347

Skill: R

15) _____ is a standard for connections and communications between your computer and digital musical instruments.

- A) MIDI
- B) MICR
- C) TCP/IP
- D) FTP

Answer: A

Page Ref: 347

Skill: R

16) A _____ is 1,048,576 bytes or approximately a million characters.

- A) terabyte
- B) kilobyte
- C) megabyte
- D) gigabyte

Answer: C

Page Ref: 349

Skill: R

17) The only language that computers understand is:

- A) SQL.
- B) machine.
- C) Basic.
- D) COBOL.

Answer: B

Page Ref: 349

Skill: R

18) The binary digits that make up machine language (1s and 0s) are called:

- A) bits.
- B) electrons.
- C) bytes.
- D) units.

Answer: A

Page Ref: 349

Skill: R

19) Which binary code is used on IBM mainframes?

- A) Unicode
- B) ANSI
- C) EBCDIC
- D) ASCII

Answer: C

Page Ref: 350

Skill: R

20) This binary code uses 16 bits and can encode most languages:

- A) ASCII.
- B) EBCDIC.
- C) Unicode.
- D) Java.

Answer: C

Page Ref: 350

Skill: R

- 21) The computer's _____ contains all of the components that do the actual processing work of the computer.
- A) main memory
 - B) control unit
 - C) motherboard
 - D) foundation

Answer: C

Page Ref: 351

Skill: R

- 22) The CPU consists of two main sections: The arithmetic logic unit and the:
- A) cache unit.
 - B) clock unit.
 - C) registry unit.
 - D) control unit.

Answer: D

Page Ref: 352

Skill: R

- 23) The _____ is the computers brain. It performs, coordinates, and manages all the calculations and instructions of the computer.
- A) register
 - B) control unit
 - C) RAM memory
 - D) central processing unit

Answer: D

Page Ref: 352

Skill: R

- 24) The hypothesis that computer processing performance would double every 18 months is called:
- A) exponential development.
 - B) Motorola's Law.
 - C) Moore's Law.
 - D) the theory of exponential returns.

Answer: C

Page Ref: 352

Skill: R

- 25) A temporary storage location where data must reside while it is being processed or manipulated is called:
- A) primary storage.
 - B) an arithmetic/logic unit.
 - C) a register.
 - D) cache.

Answer: C

Page Ref: 353

Skill: R

- 26) A small block of memory used by processors to store those instructions most recently or most often used is called:
- A) cache.
 - B) an arithmetic/logic unit.
 - C) a register.
 - D) primary storage.

Answer: A

Page Ref: 353

Skill: R

- 27) When considering elements of computer time, one millionth of a second is called a:
- A) millisecond.
 - B) microsecond.
 - C) picosecond.
 - D) nanosecond.

Answer: B

Page Ref: 353

Skill: R

- 28) Within a computer, an electronic circuit generates pulses at a rapid rate, setting the pace for processing events to take place. This circuit is called the:
- A) cache.
 - B) RAID.
 - C) system clock.
 - D) register.

Answer: C

Page Ref: 353

Skill: R

- 29) Registers, cache, random access memory (RAM), and read-only memory are examples of:
- A) secondary storage.
 - B) computer time.
 - C) central processing units.
 - D) primary storage.

Answer: D

Page Ref: 354

Skill: R

- 30) Instructions in RAM are considered _____. That is, if the power goes out all information in RAM is lost.
- A) transient
 - B) ephemeral
 - C) evaporative
 - D) volatile

Answer: D

Page Ref: 354

Skill: A

31) Information permanently stored on a hard disk, diskette, CD-ROM disk, or tape, is called _____ storage.

- A) permanent
- B) tertiary
- C) secondary
- D) primary

Answer: C

Page Ref: 355

Skill: R

32) RAID (redundant array of independent disks) is a type of:

- A) RAM.
- B) primary storage.
- C) hard drive.
- D) ROM.

Answer: C

Page Ref: 356

Skill: R

33) Mylar devices that record data as magnetized spots on tracks on the disk surface are:

- A) redundant array disks.
- B) diskettes.
- C) hard drives.
- D) optical disks.

Answer: B

Page Ref: 356

Skill: R

34) This type of storage medium consists of narrow plastic tape coated with a magnetic substance:

- A) hard disk.
- B) magnetic tape.
- C) optical disk.
- D) floppy disks.

Answer: B

Page Ref: 358

Skill: R

35) Printers that form letters using an older, electric typewriter-based technology are called:

- A) ink jet.
- B) thermal.
- C) laser.
- D) dot matrix.

Answer: D

Page Ref: 359

Skill: R

36) IBM's "Blue Pacific" is classified as a:

- A) supercomputer.
- B) network computer.
- C) mainframe computer.
- D) workstation computer.

Answer: A

Page Ref: 361

Skill: R

37) The mainstay of large corporate computing has been large, high-powered computers called _____.

- A) network computers
- B) PDAs
- C) mainframes
- D) supercomputers

Answer: C

Page Ref: 361

Skill: R

38) A special class of microcomputers designed for individuals that have the power of some midrange computers, but fit on a desktop are called:

- A) networks.
- B) thin clients.
- C) e-machines.
- D) workstations.

Answer: D

Page Ref: 362

Skill: A

39) A(n) _____ computer is a microcomputer with minimal memory and storage designed to connect to networks to use resources provided by servers.

- A) network
- B) work station
- C) midrange
- D) server

Answer: A

Page Ref: 363

Skill: R

40) First billed as information appliances, the capabilities of _____ are beginning to rival the functionality of desktop PCs.

- A) PDAs
- B) tablets
- C) portable
- D) laptop

Answer: A

Page Ref: 365

Skill: A

- 41) Battery operated cordless keyboards use _____ to bounce signals to the computer.
- A) ergonomics
 - B) batch input
 - C) radio frequency waves
 - D) scanners

Answer: C

Page Ref: 344

Skill: R

- 42) An alternative technology for wireless communications between peripheral computer devices is:
- A) text-recognition
 - B) batch input
 - C) touch screen
 - D) Bluetooth

Answer: D

Page Ref: 344

Skill: R

- 43) Each of the following is a selecting and pointing device EXCEPT:
- A) Touch screen
 - B) Light pen
 - C) Joystick
 - D) Batch input

Answer: D

Page Ref: 345

Skill: R

- 44) Possible sources of video input to a computer include all of the following EXCEPT:
- A) televisions
 - B) Video cameras
 - C) DVDs
 - D) MIDI

Answer: D

Page Ref: 347

Skill: R

- 45) MIDI stands for:
- A) Musical Instrument Digital Interface
 - B) Musical Interface Documentation Inference
 - C) Multi Interface Decompression Instance
 - D) Marginal Interest Decrement Interface

Answer: A

Page Ref: 347

Skill: R

- 46) Low-priced webcams use _____ to send a sequence of moving images in a compressed form over the internet.
- A) bit torrents
 - B) streaming video
 - C) streaming bits
 - D) byte compression

Answer: B

Page Ref: 348

Skill: R

- 47) The difference between 'streaming video' and 'streaming media' is the inclusion of _____ in the latter.
- A) colour
 - B) codecs
 - C) animation
 - D) sound

Answer: D

Page Ref: 348

Skill: A

- 48) The CPU uses a built-in program called a _____ to make incoming data intelligible (in machine language).
- A) video compressor
 - B) language translator
 - C) word processor
 - D) audio interpreter

Answer: B

Page Ref: 349

Skill: R

- 49) For added protection against external voltage power surges, many PC owners use:
- A) power supply
 - B) ALU
 - C) motherboard
 - D) surge suppressor

Answer: D

Page Ref: 351-352

Skill: R

- 50) Both _____ and _____ have facilitated the continued performance increases in microprocessors.
- A) feature coding; density
 - B) feature density; complexity
 - C) feature density; decoding
 - D) decoding; complexity

Answer: B

Page Ref: 352

Skill: R

51) CPU stands for Control Program Unit.

Answer: True False

Page Ref: 343

Skill: R

52) Processing devices transform inputs into outputs.

Answer: True False

Page Ref: 343

Skill: A

53) Ergonomics refers to the design of computer hardware and work environments that minimize health risks such as repetitive stress injuries.

Answer: True False

Page Ref: 344

Skill: R

54) Text recognition software reads text as audible speech.

Answer: True False

Page Ref: 345

Skill: A

55) Batch processing converts printed text and images into digital data.

Answer: True False

Page Ref: 344-345

Skill: A

56) Intellisense cards are a special type of credit card with a magnetic strip, a microprocessing chip, and memory circuits.

Answer: True False

Page Ref: 346

Skill: R

57) Optical character recognition (OCR) is used by the banking industry to read data, account numbers, bank codes, and check numbers on preprinted checks.

Answer: True False

Page Ref: 346

Skill: A

58) Optical mark recognition (OMR) is used in grocery stores and other retail businesses to record prices at the checkout counter.

Answer: True False

Page Ref: 346

Skill: A

59) Bar code/optical character readers are used to scan questionnaires and test answer forms where answer choices are circled or blocked in, using pencil or pen.

Answer: True False

Page Ref: 346

Skill: A

- 60) A process called speech recognition makes it possible for your computer to digitize spoken words and display them on the computer monitor.
Answer: True False
Page Ref: 347
Skill: A
- 61) MICR is a standard for connections and communications between your computer and digital musical instruments.
Answer: True False
Page Ref: 347
Skill: A
- 62) A kilobyte is 1,024 bytes or approximately a thousand characters.
Answer: True False
Page Ref: 349
Skill: R
- 63) A megabyte is 1,099,511,627,776 bytes or approximately a trillion characters.
Answer: True False
Page Ref: 349
Skill: R
- 64) The binary digits that make up machine language (1s and 0s) are called bits.
Answer: True False
Page Ref: 349
Skill: R
- 65) A temporary storage location where data must reside while it is being processed or manipulated is called cache.
Answer: True False
Page Ref: 353
Skill: R
- 66) Instructions in RAM are considered volatile.
Answer: True False
Page Ref: 354
Skill: A
- 67) Information permanently stored on a hard disk, diskette, CD-ROM disk, or tape, is called primary storage.
Answer: True False
Page Ref: 355
Skill: R
- 68) Pharmaceutical companies, such as Eli Lilly and Dow Chemical, use supercomputers to design and evaluate new combinations of chemical elements.
Answer: True False
Page Ref: 361
Skill: A

69) Most large corporations use large, high-powered computers called mainframes.

Answer: True False

Page Ref: 361

Skill: A

70) Microcomputers fit on desktops, generally cost between \$1,000 and \$5,000, and are used in homes and offices.

Answer: True False

Page Ref: 362

Skill: A

71) Moore's Law states that computer processing performance would triple every 6 months.

Answer: True False

Page Ref: 352

Skill: R

72) A single pulse of a system clock is called an instruction cycle.

Answer: True False

Page Ref: 353

Skill: R

73) One factor affecting the speed and power of the CPU is the number and size of registers.

Answer: True False

Page Ref: 353

Skill: R

74) The only device among secondary storage methods to offer sequential data access is Magnetic Tape.

Answer: True False

Page Ref: 355

Skill: A

75) Among common computer ports, the parallel port offers the slowest data transfer rates.

Answer: True False

Page Ref: 358

Skill: A

76) CPU stands for _____ processing unit.

Answer: central

Page Ref: 343

Skill: R

77) _____ refers to the design of computer hardware and work environments that minimize health risks such as repetitive stress injuries.

Answer: Ergonomics

Page Ref: 344

Skill: R

- 78) A(n) _____ is a pointing device that works by moving a small stick that sits in a holder. Selections are made by pressing buttons located near or on the holder.
Answer: joystick
Page Ref: 345
Skill: R
- 79) _____ is a type of scanner used by the banking industry to read data, account numbers, bank codes, and check numbers on preprinted checks.
Answer: Magnetic ink character recognition (MICR)
Page Ref: 346
Skill: R
- 80) A process called _____ makes it possible for your computer to digitize spoken words and display them on the computer monitor.
Answer: speech recognition
Page Ref: 347
Skill: R
- 81) The _____ is the computers brain. It is responsible for all operations and manages all the calculations and instructions of the computer.
Answer: central processing unit (CPU)
Page Ref: 352
Skill: R
- 82) Storage capacity of tape is expressed as _____, which equals the number of characters per inch or bytes per inch that can be stored on the tape.
Answer: density
Page Ref: 358
Skill: A
- 83) A _____ printer uses an electrostatic process to force ink onto the page, literally "burning" the image onto the paper.
Answer: laser
Page Ref: 360
Skill: R
- 84) _____ can be the size of a large refrigerator, and they often cost several million dollars to purchase.
Answer: Mainframes
Page Ref: 361
Skill: A
- 85) A _____ computer is a microcomputer with minimal memory and storage designed to connect to networks, especially the Internet, to use the resources provided by servers.
Answer: network
Page Ref: 363
Skill: R

86) If a peripheral device is communicating with a computer without being in line of sight, it is most likely communicating using _____.

Answer: Bluetooth

Page Ref: 344

Skill: A

87) Among other components, a computer's RAM and CPU are located on the _____.

Answer: motherboard

Page Ref: 351

Skill: A

88) Instructions most recently or most often used are stored in a computer's _____.

Answer: cache

Page Ref: 353

Skill: R

89) The computer port capable of data transfer rates in the area of 800 million bits per second is the _____ port.

Answer: IEEE 1394 ('Fire Wire')

Page Ref: 358

Skill: A

90) The period from 1964 to 1990s saw the end of the mainframe era. The advance that caused the major shift in the computing paradigm was the advent of _____.

Answer: integrated circuit

Page Ref: 360

Skill: A

91) Discuss the various standards for binary coding.

Answer: Binary codes are used to represent numbers, letters, and other characters and as machine language, they are the only language a computer understands. There are three common binary coding standards. The ASCII standard (American Standard Code for Information Interchange) is used by most microcomputers. The EBCDIC standard (Extended Binary-Coded Decimal Interchange Code) was developed by IBM and is used primarily on IBM mainframe computers. ASCII and EBCDIC are based on 8 bit combinations of information. Since each bit has two states (0 or 1), there are 256 possible characters that can be represented. A third binary code, Unicode, uses 16 bits. Sixteen bits represents 65,536 characters of information.

Page Ref: 349-350

Skill: R

92) Describe what is meant by ASCII, EBCDIC, and Unicode. List the characteristics normally associated with each.

Answer: All three are binary codes used to relay data and instructions to and from the central processing unit. ASCII (American Standard Code for Information Interchange) and EBCDIC (Extended Binary-Coded Decimal Interchange Code) are used to represent numbers, letters, and other characters in binary form. ASCII is the standard binary code adopted for data communications systems and is used by most microcomputers. EBCDIC, developed by IBM, is used primarily on IBM mainframe computers. Both ASCII and EBCDIC use various eight-bit combinations to represent characters in the English language. Software translators are used to convert English characters in ASCII to characters in other languages, such as French, Spanish, or German. Unicode, is better suited than either ASCII or EBCDIC for representing the letters and characters in languages other than English. Unicode uses 16 bits, instead of the eight bits used by ASCII and EBCDIC to represent characters. By using 16 bits, Unicode can represent more characters than ASCII and EBCDIC and can, therefore, encode most languages.

Page Ref: 350

Skill: R

93) Describe the activities of a central processing unit (CPU).

Answer: The central processing unit is the computers brain. The CPU is actually a microprocessor or chip of some type that performs all of the computers operations. It performs, manages, and coordinates all of the computers calculations and instructions. There are two main sections of the CPU, the arithmetic logic unit (ALU) and the control unit. The ALU handles the mathematical computations and the logical operations. The control unit has four main functions: (1) fetching the next program instruction, (2) decoding instructions, (3) retrieving data from memory, and (4) storing results of computations in memory.

Page Ref: 352

Skill: R

94) Describe the various types of secondary storage.

Answer: There are a number of types of secondary storage, which is permanent or nonvolatile storage. First, there are hard drives or hard disks. These drives can be many gigabytes in size and hold vast amounts of data. RAID (redundant array of independent disks) is a type of hard drive technology that stores redundant copies of data on two or more hard drives. Second, diskette drives are drives on personal computers for storing small amounts of data. Small disks called diskettes are then inserted into and removed from diskette drives as needed for storage. Third, optical disk storage is a type of storage in which laser beams are used to read from (and in some cases write to) a special metallic coated disk. CD-ROMs (compact disc - read only memory) are very popular types of optical disks. Fourth, magnetic tapes are used for permanent storage. Generally associated with large mainframe computers, magnetic tape drives are gradually being replaced by high-capacity hard drives.

Page Ref: 355-358

Skill: R

95) Describe various types of computers.

Answer: There are essentially five types of computer systems. First, supercomputers are by far the most powerful and expensive computers that exist today. They are employed for their enormous "number crunching" ability and can solve massive computational problems. Second, mainframes are often used by the largest companies for processing large amounts of business data. These machines are designed to support thousands of users simultaneously. Third, midrange computers or minicomputers, are scaled-down mainframes which generally have more computing power than personal computers. Fourth, workstations are a special type of microcomputer that is often used by engineers for processing-intensive activities such as computer-aided design or financial analysis. Fifth, microcomputers (personal computers) are used in homes and offices. They can be desktop computers, laptop computers, network computers or personal digital assistants.

Page Ref: 333-337

Skill: R

96) Compare and contrast the desktop and portable computer in terms of their relative merits. Which is more appropriate for students? Why?

Answer: Table p. 363; Desktop characteristics: one location for use; lower price; expandable; better ergonomics (larger screen size and resolution, large keyboard, etc); ease of service/repair. Portable: mobile - any location for use; higher price; very limited expandability; cramped ergonomics (small screen, low resolution, keyboard, awkward pointing device); hard to service/repair. Students would probably select the mobile/portable option as it allows them to compute anywhere (home, school, in transit). This is not a hard-and-fast rule though.

Page Ref: 363

Skill: A