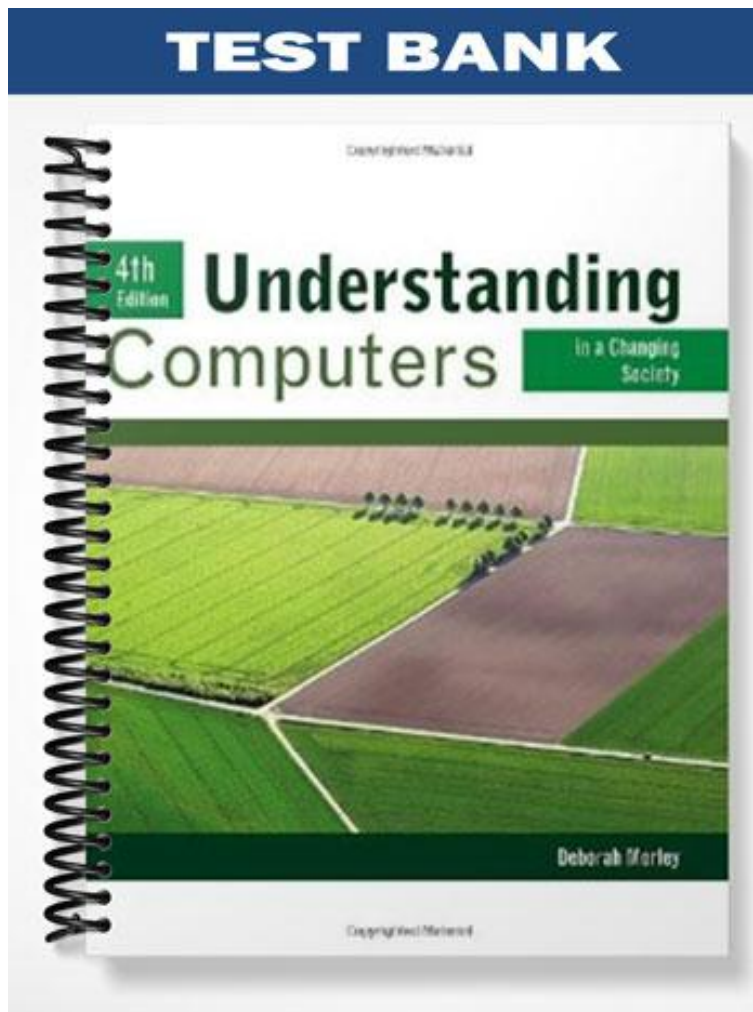


TEST BANK



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4th
Edition

Understanding Computers

In a Changing
Society



Deborah Morley

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Chapter 02: A Closer Look at Hardware and Software

TRUE/FALSE

1. Virtually all computers today—such as embedded computers, mobile devices, microcomputers, midrange servers, mainframes, and supercomputers—are digital computers.

ANS: T PTS: 1 REF: 47

2. A bit is the smallest unit of data a digital computer can recognize and is always represented by a 1.

ANS: F PTS: 1 REF: 48

3. Unicode is limited to only the Latin alphabet used with the English language.

ANS: F PTS: 1 REF: 49

4. Most mice today are mechanical mice and have a ball exposed on the bottom surface of the mouse to control the pointer movement.

ANS: F PTS: 1 REF: 50

5. Touch screens are used in consumer kiosk and other point-of-sale (POS) systems, and they are useful for on-the-job applications where it might be impractical to use a keyboard or mouse.

ANS: T PTS: 1 REF: 52



6. The kind of input device shown in the accompanying figure is popular but is seldom used by individuals to input photographs and other personal documents into a computer.

ANS: F PTS: 1 REF: 53

7. A digital camera is usually designated either as a still camera or a video camera.

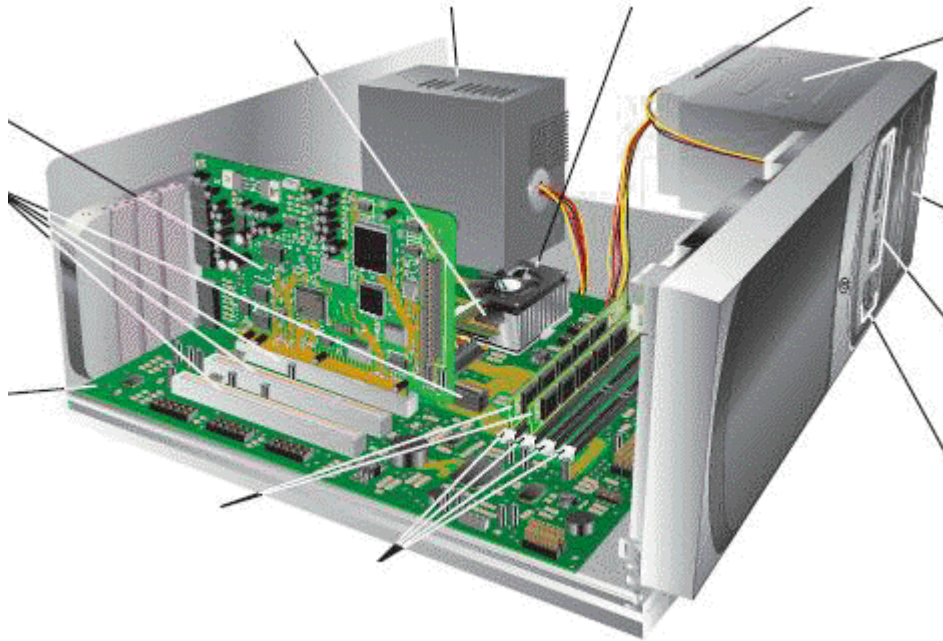
ANS: T PTS: 1 REF: 55

8. You do not need to have the mobile deposit application on your mobile phone in order to make a remote deposit via your mobile phone.

ANS: F PTS: 1 REF: 56

9. Digital camcorders are similar to conventional analog camcorders, but they store images on digital media.

ANS: T PTS: 1 REF: 56



10. RAM connects all components of the computer system and is the PC's main circuit board shown in the accompanying figure.

ANS: F PTS: 1 REF: 57

11. CPU manufacturers are focusing on single-core CPUs as a way to increase the amount of processing that a CPU (like the one in the accompanying figure) can do in a given time period.

ANS: F PTS: 1 REF: 59

12. Registers are used by a CPU like the one in the accompanying figure to temporarily store data and intermediary results during processing.

ANS: T PTS: 1 REF: 61

13. A higher CPU clock speed means that more instructions can be processed per second than the same CPU with a lower CPU clock speed.

ANS: T PTS: 1 REF: 59

14. Data in RAM is kept when the program using that data is closed.

ANS: F PTS: 1 REF: 60

15. Display devices today are typically color displays, which form colors by mixing combinations of four colors—red, green, blue, and white.

ANS: F PTS: 1 REF: 63

16. Laser printers print one entire page at a time.

ANS: T PTS: 1 REF: 63

17. Storage systems are RAM, which is volatile and holds data only temporarily.

ANS: F PTS: 1 REF: 65

18. Flash memory storage systems represent data using electrons.

ANS: T PTS: 1 REF: 66

19. For security purposes, both internal and external hard drives today are increasingly coming with built-in encryption that automatically encrypts all data stored on the hard drive and protects access to the hard drive with a secure password.

ANS: T PTS: 1 REF: 67

20. Hybrid hard drives include both flash memory and a magnetic hard drive.

ANS: T PTS: 1 REF: 68

MODIFIED TRUE/FALSE

1. USB drives are hard drives that use flash memory instead of spinning hard disk platters and magnetic technology. _____

ANS: F
Solid-state drives
SSDs
Solid-state drives (SSDs)

PTS: 1 REF: 68

2. Optical discs are thin circular discs made out of a very strong plastic. _____

ANS: T PTS: 1 REF: 69

3. Standard-sized CD discs usually hold 4.7 GB (single-layer discs) or 8.5 GB (dual-layer discs).

ANS: F, DVD

PTS: 1 REF: 70

4. Unlike hard drive and optical storage systems, flash memory storage systems have no moving parts.
-

ANS: T

PTS: 1

REF: 72

5. A(n) DVD contains one or more flash memory chips, a controller chip, other electrical components, and metal contacts to connect it to the device or reader with which it is being used.
-

ANS: F, Flash memory card

PTS: 1

REF: 72

6. A(n) smart card is a credit card-sized piece of plastic that contains computer circuitry and components—typically a processor, memory, and storage. _____

ANS: T

PTS: 1

REF: 76

7. A(n) server adapter, also called a network interface card (NIC) when it is in the form of an expansion card, is used to connect a computer to a network. _____

ANS: F, network

PTS: 1

REF: 78

8. Modem is the term used for a device that connects a computer to a network over telephone lines.
-

ANS: T

PTS: 1

REF: 78

9. POS software is software that is developed and sold for a profit. _____

ANS: F, Commercial

PTS: 1

REF: 79

10. To reopen a document at a later time, you use the file command. _____

ANS: F, open

PTS: 1

REF: 81

11. The menu bar appears at the top of many windows and contains text-based lists (menus), which provide access to commands that can be selected to perform actions in that program.
-

ANS: T

PTS: 1

REF: 81 | 82

12. Formatting changes the actual content of a document. _____

ANS: F, Editing

PTS: 1

REF: 82

13. Anything (such as a program, letter, digital photograph, or song) stored on a storage medium is called a(n) file. _____

ANS: T

PTS: 1

REF: 83

14. To keep files organized, related documents are often stored in stations located on the storage medium.

ANS: F, folders

PTS: 1

REF: 83

15. You can delete an item by selecting it and pressing the F10 key on the keyboard.

ANS: F, Delete

PTS: 1

REF: 83

MULTIPLE CHOICE

1. Most digital computers are binary computers, which can understand only two states, usually thought of as ____ and represented by the digits 0 and 1.

a. off and on

c. up and down

b. hot and cold

d. right or left

ANS: A

PTS: 1

REF: 47

2. A kilobyte (KB) is equal to ____ bytes, but is usually thought of as approximately 1,000 bytes.

a. 1,012

c. 1,036

b. 1,024

d. 1,048

ANS: B

PTS: 1

REF: 48

3. ____ is a universal international coding standard designed to represent text-based data written in any ancient or modern language, including those with different alphabets, such as Chinese, Greek, Hebrew, Amharic, Tibetan, and Russian.

a. Unicode

c. International code

b. Dualcode

d. Language code

ANS: A

PTS: 1

REF: 49

4. Some keys on a keyboard, like the Caps Lock and Number Lock keys, are ____ keys, which are pressed once to turn the feature on and again to turn the feature off.

a. switch

c. flip

b. toggle

d. update

ANS: B

PTS: 1

REF: 50

5. Some PCs and devices use special electronic pens (also called digital pens and tablet pens) that don't scratch the screen and contain buttons or switches; others accept input via a small metal or plastic _____.

a. pin

c. stick

b. pointer

d. stylus

ANS: D PTS: 1 REF: 51

6. A barcode is a(n) ____ code that represents data with bars of varying widths or heights.
- a. read/write
 - b. optical
 - c. magnetic
 - d. laser

ANS: B PTS: 1 REF: 54

7. RFID-tagged items can be read by an RFID reader when they are within a range from two inches up to ____, depending on the type of tags and the radio frequency being used.
- a. 100 feet or more
 - b. 200 feet or more
 - c. 300 feet or more
 - d. 400 feet or more

ANS: C PTS: 1 REF: 54

8. ____ input data from special forms to score or tally exams, questionnaires, ballots, and so forth.
- a. OMRs
 - b. OCRs
 - c. MICRs
 - d. BCRs

ANS: A PTS: 1 REF: 55



9. The primary appeal of digital ____ cameras like the ones in the accompanying figure is that the images are immediately available for viewing or printing, instead of having to have the film developed first.
- a. still
 - b. video
 - c. embedded
 - d. media

ANS: A PTS: 1 REF: 55

15. ____ consists of nonvolatile chips that permanently store data or programs.
- a. ROM
 - b. RAM
 - c. RMA
 - d. CPU
- ANS: A PTS: 1 REF: 61
16. Cache memory is used to speed up processing by storing the data and instructions that may be needed next by the CPU ____.
- a. on the desktop
 - b. in handy locations
 - c. in the system memory
 - d. on a CD
- ANS: B PTS: 1 REF: 61
17. ____ use cathode-ray tube technology to display images; as a result they are large, bulky, and heavy like conventional televisions.
- a. LCDs
 - b. Flat screens
 - c. Mainframes
 - d. CRTs
- ANS: D PTS: 1 REF: 62
18. The screen of a display device is divided into a fine grid of small areas or ____ called pixels (from the phrase picture element).
- a. triangles
 - b. rectangles
 - c. dots
 - d. squares
- ANS: C PTS: 1 REF: 62
19. ____ printers, like old ribbon typewriters, have a print mechanism that actually strikes the paper to transfer ink to the paper.
- a. Impact
 - b. Push
 - c. Tap
 - d. Click
- ANS: A PTS: 1 REF: 63
20. Common print resolutions for laser printers are between 600 and ____ dpi.
- a. 1,000
 - b. 1,600
 - c. 2,000
 - d. 2,400
- ANS: D PTS: 1 REF: 63
21. In the chapter, storage devices were listed as existing in three forms that do NOT include ____.
- a. local
 - b. remote
 - c. external
 - d. internal
- ANS: A PTS: 1 REF: 66
22. The surface of a hard disk is organized into circular rings, called ____, and pie-shaped groups of sectors.
- a. indents
 - b. tracks
 - c. grooves
 - d. pits
- ANS: B PTS: 1 REF: 67
23. The ____ hard drive includes both flash memory and a magnetic hard drive.
- a. hybrid
 - c. multitasking

b. embedded d. Janus

ANS: A PTS: 1 REF: 68

24. ____ are an especially attractive option for portable computers and mobile devices because they consume less power, make no noise, and boot faster.

- a. Memory-state drives
- b. Solid-state drives
- c. Static-state drives
- d. Dynamic-state drives

ANS: B PTS: 1 REF: 68

25. ____ hard drives are permanently located inside the system unit and are not designed to be removed, unless there is a problem with them.

- a. Static
- b. Internal
- c. External
- d. Remove

ANS: B PTS: 1 REF: 69

26. Data stored on optical discs (such as ____) is read using laser beams.

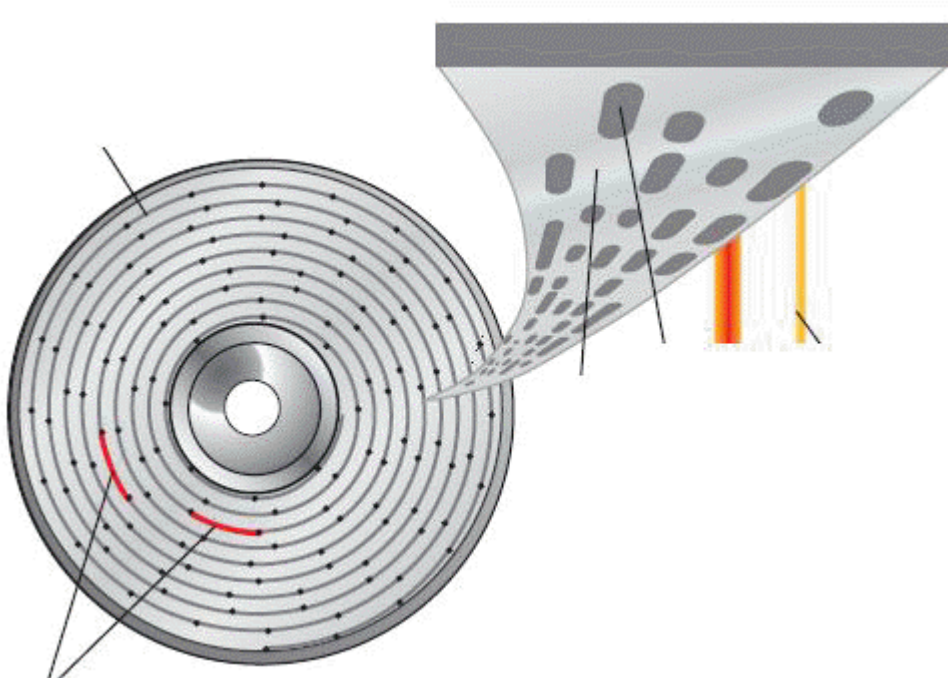
- a. CDs
- b. DVDs
- c. Blu-ray Discs
- d. all of the above

ANS: D PTS: 1 REF: 69

27. With molded or stamped optical discs, tiny depressions (when viewed from the top side of the disc) or bumps (when viewed from the bottom) are created on the disc's surface. These bumps are called ____.

- a. indents
- b. tracks
- c. pits
- d. grooves

ANS: C PTS: 1 REF: 69



28. In the accompanying figure, the areas of the disc (on the left) shown in red-orange are considered to be ____.

- a. tracks
- c. clusters

- b. sectors
ANS: B PTS: 1 REF: 70
- d. legacy areas
29. In the accompanying figure, a single ____ spirals from the center of the disc outward.
a. track
b. sector
ANS: A PTS: 1 REF: 70
- c. cluster
d. legacy area
30. A transition between a pit and a ____ in the accompanying figure is interpreted as a 1.
a. track
b. sector
ANS: C PTS: 1 REF: 70
- c. land
d. cluster
31. The data on a read-only disc cannot be ____, since the pits that are molded into the surface of the disc when the disc is produced are permanent.
a. erased
b. changed
ANS: D PTS: 1 REF: 71
- c. added to
d. all of the above
32. The ____ format is used with the Sony PSP handheld gaming device.
a. BD-ROM
b. BD-R DL
ANS: D PTS: 1 REF: 71
- c. PSP
d. UMD
33. USB flash drives (sometimes called USB flash memory drives, ____ drives, or jump drives) consist of flash memory media integrated into a self-contained unit that connects to a computer or other device via a standard USB port and is powered via the USB port.
a. half
b. thumb
ANS: B PTS: 1 REF: 73
- c. finger
d. hand
34. ____ storage is increasingly being used for backup purposes.
a. Local
b. Smart
ANS: D PTS: 1 REF: 76
- c. Procedural
d. Online
35. Smart cards today store a relatively small amount of data (typically ____) that can be used for payment or identification purposes.
a. 32 KB or less
b. 64 KB or less
ANS: B PTS: 1 REF: 76
- c. 128 KB or less
d. 256 KB or less

Case-Based Critical Thinking Questions

Case 2-1

Chloe is putting together a presentation in which she explains how printers work.

36. Chloe learns that both laser and ink-jet printers can print on ____.

- a. sheets of labels
- b. envelopes
- c. photo paper
- d. any of the above

ANS: D PTS: 1 REF: 64 TOP: Critical Thinking

37. Which of the following is a true statement Chloe can make about ink-jet printers?
- a. They are typically more expensive than laser printers.
 - b. Laser printers, not ink-jet printers, are usually the printer of choice for home use.
 - c. The cost of replaceable ink cartridges can add up, especially if you do a lot of color printing.
 - d. The print head for ink-jet printers typically travels up and down the length of the page.

ANS: C PTS: 1 REF: 64 TOP: Critical Thinking

38. Chloe learns that in her research maps, blueprints, advertising banners, and other large documents can be printed on ____ ink-jet printers.
- a. wide-format
 - b. mobile
 - c. 3D
 - d. barcode

ANS: A PTS: 1 REF: 65 TOP: Critical Thinking

39. In an ink-jet printer, as Chloe discovers, a heating element makes the ink boil, which causes a steam bubble to form ____.
- a. and push the ink through the firing chamber
 - b. and power the cartridge across the page
 - c. and eject the ink into the firing chamber
 - d. either a or b

ANS: A PTS: 1 REF: 65 TOP: Critical Thinking

40. Ink-jet printers form images by spraying tiny drops of liquid ink onto the page, ____ at a time.
- a. one printed line
 - b. two printed lines
 - c. three printed lines
 - d. four printed lines

ANS: A PTS: 1 REF: 64 TOP: Critical Thinking

COMPLETION

1. A(n) _____ is approximately 1 trillion bytes.

ANS:
terabyte
TB
terabyte (TB)
TB (terabyte)

PTS: 1 REF: 48

2. The numbering system that represents all numbers using just two symbols (0 and 1) is called the _____ numbering system.

ANS: binary

PTS: 1 REF: 48

3. A(n) _____ is input used to enter characters at the location on the screen marked by the insertion point or cursor.

ANS: keyboard

PTS: 1 REF: 49

4. A common pointing device that the user slides along a flat surface to move a pointer around the screen and clicks its buttons to make selections is called a(n) _____.

ANS: mouse

PTS: 1 REF: 50

5. A display device that is touched with the finger to issue commands or otherwise generate input to the connected device is a(n) _____.

ANS: touch screen

PTS: 1 REF: 52



6. As shown in the accompanying figure, a(n) _____ is an input device that captures printed text and graphics and transfers them to a computer in digital form

ANS: scanner

PTS: 1 REF: 53



7. As shown in the accompanying figure, a(n) _____ is an input device that takes pictures and records them as digital data (instead of film or videotaped) images.

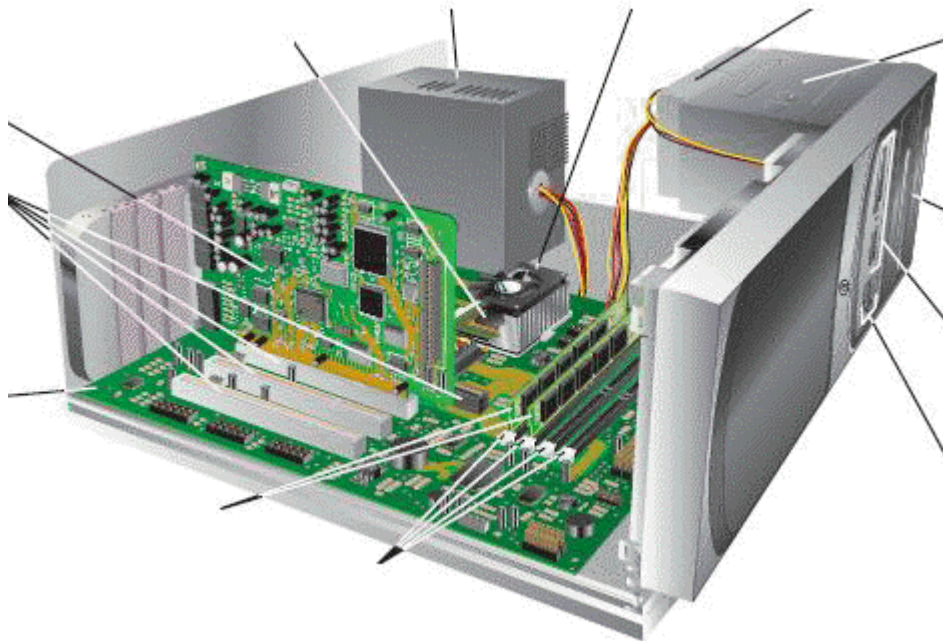
ANS: digital camera

PTS: 1 REF: 55

8. The main case of a computer, called the _____, houses the CPU, motherboard, memory, and other devices.

ANS: system unit

PTS: 1 REF: 57



9. As shown in the accompanying figure, the main circuit board of a computer, located inside the system unit, to which all computer system components connect, is called the _____.

ANS: motherboard

PTS: 1 REF: 57

10. A CPU that contains four separate processing cores is called a(n) _____ CPU.

ANS:
quad-core
quad core

PTS: 1 REF: 59

11. A medium whose content is erased when the power is shut off is considered to be _____.

ANS: volatile

PTS: 1 REF: 60

12. A group of very fast memory chips located on or close to the CPU to help speed up processing is called _____ memory.

ANS: cache

PTS: 1 REF: 61

13. A(n) _____ is high-speed memory built into the CPU that temporarily stores data during processing

ANS: register

PTS: 1 REF: 61

14. A type of nonvolatile memory into which data can be stored and retrieved is called _____ memory.

ANS: flash

PTS: 1 REF: 61

15. A(n) _____ is a hardware device that produces output.

ANS: output device

PTS: 1 REF: 62

16. A(n) _____ is an output device that uses a laser beam to charge the appropriate locations on a drum to form the page's image, and then toner powder is released from a toner cartridge and sticks to the drum and is then transferred to a piece of paper when the paper is rolled over the drum.

ANS: laser printer

PTS: 1 REF: 63

17. A(n) _____ is an output device that sprays tiny drops of ink to produce images on paper.

ANS:
ink-jet printer
ink jet printer

PTS: 1 REF: 64

18. _____ are output devices that provide audio output for computer games, music, video clips and TV shows, videoconferencing, and other applications.

ANS: Speakers

PTS: 1 REF: 65

19. A piece of hardware, such as a DVD drive, into which a storage medium is inserted to be read from or written to is called a(n) _____ device.

ANS:
storage
Storage

PTS: 1 REF: 65

20. A display device for a desktop computer is a(n) _____.

ANS: monitor

PTS: 1 REF: 62

ESSAY

1. Please describe a bit and a byte. Also, explain how many bytes are in a kilobyte, megabyte, gigabyte, terabyte, and petabyte.

ANS:

Data must be represented appropriately (using 0s and 1s) in order to be used by a computer. A single 0 or 1 is called a bit; 8 bits together is referred to as a byte.

A kilobyte (KB) equals 1,024 bytes

A megabyte (MB) is about 1 million bytes

A gigabyte (GB) is about 1 billion bytes

A terabyte (TB) is about 1 trillion bytes

A petabyte (PB) is about 1,000 terabytes

PTS: 1 REF: 47 | 48 TOP: Critical Thinking

2. Please explain how a laser printer works. Terms to use in your explanation include drum, toner powder, and toner cartridge.

ANS:

To print a document, the laser printer first uses a laser beam to charge the appropriate locations on a drum to form the page's image, and then toner powder (powdered ink) is released from a toner cartridge and sticks to the drum. The toner is then transferred to a piece of paper when the paper is rolled over the drum, and a heating unit fuses the toner powder to the paper to permanently form the image.

PTS: 1 REF: 63 TOP: Critical Thinking

3. Explain each of the following: internal hard drive, external hard drive, portable hard drive.

ANS:

Internal hard drives are permanently located inside a computer's system unit and typically are not removed unless there is a problem with them. Virtually all computers have at least one internal hard drive (either a magnetic hard drive or an SSD) that is used to store programs and data. External hard drives are commonly used to transport a large amount of data from one computer to another (by moving the entire hard drive to another computer), for backup purposes, and for additional storage. Today, because of their large capacity, full-sized external hard drives (which typically are magnetic hard drives and hold between 500 GB and 4 TB) are often used by individuals to store their digital photos, digital music, home movies, recorded TV shows, and other multimedia content to be distributed to the computers and entertainment devices located in the home. While full-sized external hard drives can be moved from computer to computer when needed, portable hard drives are smaller external hard drives specifically designed for that purpose. Unlike full-sized hard drives (which typically need to be plugged into a power outlet to be used), portable hard drives are often powered via the computer they are being used with instead. Portable magnetic hard drives typically hold up to 500 GB; the capacity of portable SSD hard drives at the present time is smaller—up to 128 GB. Most external desktop and portable hard drives connect to the computer via a USB connection. However, some can connect via a wired or wireless networking connection instead, and ExpressCard hard drives connect via an ExpressCard slot.

PTS: 1

REF: 69

TOP: Critical Thinking

4. Explain what remote storage is, as well as online storage or cloud storage.

ANS:

Remote storage refers to using a storage device that is not connected directly to the user's computer; instead, the device is accessed through a local network or through the Internet. Using a remote storage device via a local network (referred to as network storage) works in much the same way as using local storage (the storage devices and media that are directly attached to the user's computer). To read data from or write data to a remote storage device (such as a hard drive in another computer being accessed via a network), the user just selects it and then performs the necessary tasks in the normal fashion. Network storage is common in businesses; it is also used by individuals with home networks for backup purposes or to share files with another computer in the home.

Remote storage devices accessed via the Internet are often referred to as online storage or cloud storage. While these terms are often used interchangeably, some view cloud storage as a specific type of online storage that can be accessed on demand by various Web applications. Most online applications (such as Google Docs, the Flickr photo sharing service, and social networking sites like Facebook, for instance) provide online storage for these services. There are also sites whose primary objective is to allow users to store documents online, such as Microsoft SkyDrive. The ability to store documents online (or "in the cloud") is growing in importance as more and more applications are becoming Web based and as individuals increasingly want access to their files from anywhere with any Internet-enabled device, such as a portable computer or mobile phone.

Online storage is also increasingly being used for backup purposes. In fact, some online storage sites have an automatic backup option that uploads the files in designated folders on your computer to your online account at regular specified intervals, as long as your computer is connected to the Internet. Many Web sites providing online storage to individuals offer the service for free (for instance, SkyDrive gives each individual 25 GB of free storage space); others charge a small fee, such as \$10 per month for 50 GB of storage space. Typically, online/cloud storage sites are password-protected and allow users to specify uploaded files as private files or as shared files that designated individuals can access.

PTS: 1

REF: 75 | 76

TOP: Critical Thinking



5. For each of the items listed, please identify where in the accompanying figure it appears (i.e. "it is the "x" icon in the upper right corner") and what function it serves: Ribbon, tabs, Microsoft Office Button, Dialog Box Launcher, and Gallery.

ANS:

The Ribbon, shown above, is a new feature of Microsoft Office starting with Office 2007, which consists of tabs, which contain groups of related commands for the program being used. For convenience, most programs have a Home tab that contains the most frequently used commands in that program. In addition to the standard Ribbon tabs that are available whenever the program is open, additional contextual tabs are displayed as needed, depending on the action being taken. The Microsoft Office Button (in Microsoft Office 2007) and the File tab (in Microsoft Office 2010) replace the File menu used in older versions of Office and contain commands commonly used with documents, such as to open, save, print, send, and publish them. The Microsoft Office Button is the red, yellow, blue and green icon in the upper left corner of the Ribbon. The Dialog Box Launcher opens a dialog box or task pane for its group. The Dialog Box Launcher is the small icon located in the lower right hand corner of the groups of related commands. The Gallery displays sets of options that can be selected for a particular feature; the Styles gallery is shown above. In this graphic, the gallery is above the heading "Styles" and shows four different font options.

PTS: 1

REF: 82

TOP: Critical Thinking