

# SOLUTIONS MANUAL



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ILLUSTRATED SERIES™

## Computer Concepts

Brief

EIGHTH EDITION



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# *Computer Concepts - Illustrated Introductory, Eighth Edition*

## **Unit A: Computer and Internet Basics**

### [Student Edition Lab for this unit:](#)

E-mail

### [Unit Review](#)

1. Make sure that you can define each of the key terms in this unit in your own words. Select 10 of the terms with which you are unfamiliar and write a sentence for each of them.

The first unit review assignment is designed for the student's own review and is quite lengthy. We recommend that you use this assignment as an in class assignment or a jumping off point for classroom

2. Explain how you use computers in your daily life.

The textbook contains the following information relevant to this question. Students should use their OWN WORDS in their answers.

Students can refer to the various aspects of computers in their life. They may generalize computers and refer to the ongoing digital revolution--- the process of social, political, and economic change brought about by digital technology, such as computers and the Internet. The digital revolution became a significant factor in the 1980s, as computers and other digital devices became popular and as the Internet opened global communications. The digital revolution is creating an Information Society in which owning, generating, distributing, and manipulating information becomes a significant economic and cultural activity. It is bringing about social and economic change. Digital electronics, computers, communications networks, the Web, and digitization are fueling the digital revolution.

The digital revolution impacts the tools that are available to you. Digital electronic devices include computers, portable media players such as iPods, digital cameras and camcorders, cell phones, radios and televisions, global positioning systems (GPSs), DVD and CD players, e-book readers, digital voice recorders, and arcade games. Even cars and appliances, such as microwave ovens, refrigerators, and washing machines, include digital electronics for control, monitoring, and fault diagnosis. These digital innovations require that society makes adjustments to traditions, lifestyles, and laws. These changes affect you—the way you work and the way you play.

3. Explain the basic functions of a computer: input, processing, storing, and output. Explain why the stored program concept is important to computers.

The textbook contains the following information relevant to this question. Students should use their OWN WORDS in their answers.

Computer input is whatever is put into a computer system. A person can supply input, the environment can, or another computer can. Examples of the kinds of input that a computer can accept include the words and symbols in a document, numbers for a calculation, pictures, temperatures from a thermostat, audio signals from a microphone, and instructions from a computer program. An input device, such as a keyboard or mouse, gathers input and transforms it into a series of electronic signals that the computer can work with.

In the context of computing, data refers to the symbols that represent facts, objects, and ideas. Computers manipulate data in many ways, and we call this manipulation processing. The series of instructions that tell a computer how to carry out processing tasks are referred to as a computer program, or simply a “program.” These programs form the software that sets up a computer to do a specific task. Some of the ways that a computer can process data include performing calculations, sorting lists of words or numbers, modifying documents and pictures, and drawing graphs. In a computer, most processing takes place in a component called the central processing unit (CPU), which is sometimes described as the “brain” of the computer.

A computer stores data so that it will be available for processing. Most computers have more than one location for storing data, depending on how the data is being used. Memory is an area of a computer that temporarily holds data that is waiting to be processed, stored, or output. Storage is the area where data can be left on a permanent basis when it is not immediately needed for processing.

Output is the results produced by a computer. Some examples of computer output include reports, documents, music, graphs, and pictures. An output device displays, prints, or transmits the results of processing. Figure A-3 helps you visualize input, processing, storage, and output activities of a computer.

4. Identify and describe the purpose of each of the components of a basic personal computer system.
- Computer system unit. The system unit is the case that holds the main circuit boards, microprocessor, power supply, and storage devices. The system unit for most notebook computers holds a built-in keyboard and speakers, too.
  - Display device. Most desktop computers use a separate monitor as a display device, whereas notebook computers use a flat-panel LCD screen (liquid crystal display) that is attached to the system unit.
  - Keyboard. Most computers are equipped with a keyboard as the primary input device.
  - Mouse. A mouse is an alternative input device designed to manipulate on-screen graphical objects and controls.
  - Hard disk drive. A hard disk drive can store billions of characters of data. It is usually mounted inside the computer’s system unit. A small external light indicates when the drive is reading or writing data.
  - CD-ROM, BD (Blu-ray drive), or DVD drive. CD BD and DVD drives are optical storage devices that use laser technology to read data that is permanently stored on computer or

audio CDs, DVDs, or BDs. A DVD drive can read data from computer CDs, audio CDs, computer DVDs, or DVD movie disks. CD-ROM and DVD drives typically cannot be used to write data onto disks. The “RO” in “ROM” stands for “read only” and means that the drive can read data from disks, but cannot be used to store new data on them.

- CD/DVD-writer. Many computers—especially desktop models—include a CD/DVD-writer that can be used to create and copy CDs and DVDs.
- Sound card and speakers. Desktop computers have a rudimentary built-in speaker that’s mostly limited to playing beeps. A small circuit board, called a sound card, is required for high-quality music, narration, and sound effects. A desktop computer’s sound card sends signals to external speakers. A notebook’s sound card sends signals to speakers that are built into the notebook system unit.
- Modem. Virtually every personal computer system includes a built-in modem that can be used to establish an Internet connection using a standard telephone line.
- Printer. A computer printer is an output device that produces computer-generated text or graphical images on paper.
- Web cam. Allows you to capture video images using your computer. Software makes it possible to send and receive video in real time with another person to communicate with voice as well as images.

5. Describe the difference between an operating system and application software.

The textbook describes the difference as: Application software is a set of computer programs that helps a person carry out a task. Word processing software, for example, helps people create, edit, and print documents. Personal finance software helps people keep track of their money and investments. Video editing software helps people create and edit home movies—and even some professional films like *Up* or *Bolt*.

An operating system is essentially the master controller for all of the activities that take place within a computer. Operating systems include Windows 7, Windows Vista, and Mac OS X (for the Mac computer). Operating systems are classified as system software, not application software, because their primary purpose is to help the computer system monitor itself in order to function efficiently. Unlike application software, an operating system does not directly help people perform application-specific tasks, such as word processing. People do, however, interact with the operating system for certain operational and storage tasks, such as starting programs and locating data files.

The textbook explains a graphical user interface as follows: A GUI, such as the one associated with the Windows OS, the Mac OS, or the Linux OS, displays on-screen icons, menus, buttons, and other graphical controls. These controls are designed to be manipulated by a mouse. For example, you might click an icon to start an application program, or drag time slots on a calendar to create appointments.

Some common features of a graphical user interface are icons, menus, buttons, and other graphical controls.

6. Explain why the stored program concept is important to computers.

In a modern computer, the idea of a stored program means that a series of instructions for a computing task can be loaded into a computer's memory. These instructions can easily be replaced by a different set of instructions when it is time for the computer to perform a different task. The stored program concept allows you to use your computer for one task, such as word processing, and then easily switch to a different type of computing task, such as editing a photo or sending an e-mail message.

7. List at least five activities you can accomplish using the Internet. If you have used the Internet, write a brief paragraph explaining how you benefit from using it.

Web sites. Most people envision Web sites as locations in cyberspace that correspond to a corporation's headquarters, a store, a magazine, or a library. A Web site can provide information or it can provide access to other resources, such as search engines and e-mail.

Search engines. Without search engines, using the Internet would be like trying to find a book in the Library of Congress by wandering around the stacks. Search engines help catalog a huge portion of the data stored on servers that are connected to the Internet.

E-commerce. The Internet is revolutionizing business by directly linking consumers with retailers, manufacturers, and distributors. E-commerce, or "electronic commerce" includes such activities as online shopping, electronic auctions, and online stock trading.

E-mail. Also known as "electronic mail," e-mail allows one person to send an electronic message to another person or to a group of people listed in a personal address book. A variation of e-mail called a mailing list server or "listserv" maintains a public list of people who are interested in a particular topic. Messages sent to the list server are automatically distributed to everyone on the mailing list.

Bulletin Boards. Usenet is a worldwide bulletin board system that contains more than 15,000 discussion forums called newsgroups. Newsgroup members post messages to the bulletin board that can be read and responded to by other group members.

Downloads and uploads. Internet servers store all sorts of useful files, containing documents, music, software, videos, animations, and photos. The process of transferring one of these files from a remote computer, such as a server, to a local computer, such as your personal computer, is called downloading. Sending a file from a local computer to a remote computer is called uploading.

Chat groups and instant messaging. A chat group consists of several people who connect to the Internet and communicate by typing comments to each other using their computer keyboards. A private version of a chat room, called instant messaging, allows two or more people to send typed messages back and forth.

Internet telephony. As simple as picking up the telephone, Internet telephony—also called Voice over IP (VoIP) allows telephone-style conversations to travel over the Internet to virtually anywhere in the world. Internet telephony, such as Skype requires special software at both ends of the conversation and, instead of a telephone, it uses a microphone connected to a computer. When using Internet telephony, the sound quality is often as good as a cellular phone, and the price—free—is right.

Broadcasting and Podcasting. The Internet carries radio shows and teleconferences that can be broadcast worldwide. These technologies are popular because broadcasts aren't limited to a small local region, but instead can be heard by listeners all over the world.

Social Networking. Social Networking sites such as Facebook and LinkedIn provide Web sites for collaboration of ideas. It's become a very popular way for people to meet, interact, and share ideas, pictures, videos, and random thoughts.

P2P. A technology known as peer-to-peer, also called “P2P,” makes it possible for one person’s computer to directly access the content of another person’s hard disk—with permission, of course. This technology is the basis for Gnutella and the controversial Napster, which uses the Internet to give individuals access to one another’s music files.

Blogs. Short for “Web Logs,” Blogs are journals or other records posted by individuals for the public to read and comment on.

8. Make a list of the benefits of using email to send and receive messages.

Emails are delivered immediately and are an inexpensive form of communication.

You do not need to be at your computer to receive email; you don’t have to be present or available to receive email communications and you can read and reply to email when you’re ready.

You can send files, such as documents, videos, and photos, in email.

9. Describe the components of a URL.

Every Web page has a unique address called a URL (uniform resource locator). Most URLs begin with http://. Some begin with https://. Examples would be www.google.com or www.cengage.com.

URLs can contain the subdirectory and file name of a document, whereas an e-mail address simply refers to the name of the e-mail user and server.

10. Describe the components of an email address. If you have an email address, use it as an example.

An e-mail address typically consists of a user ID, an @ symbol, and the name of the computer that maintains the mailbox. An example would be loislane@hotmail.com.

### Select the best answer

**(Highlighted answer is the correct answer.)**

[Page Reference in book is listed in brackets after the question.]

1. Which of the following is not a type of personal computer? [ 6 ]

- a. desktop
- b. notebook
- c. mainframe
- d. netbook

2. The part that is considered the brains of the computer is called the \_\_\_\_\_ processing unit. [ 5 ]

- a. main
- b. central
- c. operating
- d. local

3. The idea of stored programs means that instructions for a computing task can be loaded into a computer’s \_\_\_\_\_. [ 5 ]

- a. hard drive
- b. memory
- c. operating system
- d. software

4. The system \_\_\_\_\_ is the core hardware in a computer system; it houses important parts such as the circuit boards, processor, power supply, and storage devices. [ 2 ]

- a. processor
- b. memory
- c. drive
- d. unit

5. A device that expands a computer's capability is called a(n) \_\_\_\_\_ device. [ 3 ]

- a. input
- b. peripheral
- c. output
- d. processing

6. The \_\_\_\_\_ refers to the computer device that makes it possible to send video. [ 9 ]

- a. Web cam
- b. scanner
- c. mp3 player
- d. netbook

7. A(n) \_\_\_\_\_ system is the software that acts as the master controller for all of the activities that take place within a computer system. [ 10 ]

- a. application
- b. processor
- c. digital
- d. operating

8. A computer \_\_\_\_\_ consists of two or more computers and other devices that are connected for the purpose of sharing data and programs. [ 9 ]

- a. system
- b. network
- c. netbook
- d. hardware

9. The two big differences between desktop and notebook computers are \_\_\_\_\_ and cost. [ 6 ]

- a. power
- b. operating systems
- c. physical size
- d. software

10. A \_\_\_\_\_ is the system unit of choice for computer owners who want to upgrade because it is easy to get inside and swap parts. [ 6 ]

- a. tower unit
- b. notebook
- c. netbook
- d. PDA

11. The \_\_\_\_\_ often provides a clue to the contents of a file. [ 5 ]

- a. browser
- b. application
- c. filename
- d. operating system

12. A \_\_\_\_\_ computer has one button or switch, often located on the keyboard that turns on the computer, the monitor, and the speakers. [ 6 ]

- a. desktop unit
- b. notebook
- c. tower unit
- d. PDA

13. A(n) \_\_\_\_\_ is a personal journal posted on the Web for access by the public. [ 12 ]

- a. chat
- b. email
- c. instant message
- d. blog

14. An email account has a unique address that typically consists of a user ID, the \_\_\_\_\_ symbol, and the name of the computer that maintains the mailbox. [ 14 ]

a. @  
b. #

c. &  
d. \*

15. Every Web page has a unique address called a(n) \_\_\_\_\_. [ 13 ]

a. ARL  
b. URL

c. RUL  
d. LUR

16. Facebook, LinkedIn, and MySpace are examples of Web sites that provide social \_\_\_\_\_. [ 12 ]

a. chatting  
b. blogging

c. networking  
d. email

17. To find information on the Web, it is best to use a \_\_\_\_\_ engine. [ 13 ]

a. Web  
b. home

c. search  
d. program

18. A Web \_\_\_\_\_ is a series of Web pages on a specific topic. [ 13 ]

a. home  
b. site

c. group  
d. URL

19. Digital \_\_\_\_\_ is the trend in which several technologies with distinct functionalities evolve to form a single product. [ 3 ]

a. revolution  
b. electronics

c. divide  
d. convergence

20. A(n) \_\_\_\_\_ is any word or phrase that you type in a search engine to describe the information that you are trying to find. [ 13 ]

a. keyword  
b. adjective

c. verb  
d. Web word

## Independent Challenges

### Independent Challenge 1

Students were instructed to:

1. Write a one-page paper describing the computer that they use most frequently.
2. Use the Key Terms list from this unit to describe their computer's components and the function of each.
3. Prepare a final draft, underlining each Key Term used in their paper.
4. Submit the paper according to the instructor's directions.

**Making the assignment:** This project should be assigned to individuals. Make sure that you tell your students how they should submit this project: by e-mail, on disk, or as hard copy. If students do not have



access to a computer at home, provide them with samples in the lab or classroom if possible that they can use.

**Deliverables:** The paper will be ONE page long in a word processing format or printed.

**Grading:**

50 points = accuracy in describing their personal computer's components

25 points = completeness of each component's description (including its functions)

25 points = proper use of key terms from this unit

**Independent Challenge 2**

Students were instructed to:

1. Write 10 questions on index cards to be used in a game show.
2. Write the answer to each question on the back and the page reference in the text where it can be found.
3. Quiz each other in small groups.

**Making the assignment:** This project should be assigned to individuals, who then form small-groups to quiz each other. Students should put their name on each card and place it in an envelope with their name on it.

**Deliverables:** 10 index cards:

- 2 simple questions, 5 medium questions, 3 difficult questions
- The answers and page references should be on the back

**Grading:**

50 points = quality of their questions

25 points = completeness of their solutions

25 points = participation in small group quiz sessions

**Independent Challenge 3**

1. Fill in the table on the page for any digital equipment they own.
2. Determine if they rent, lease, or use the equipment.

**Deliverables:** completed table

- Completed table with information on Equipment, Brand/Model and Serial Number

**Grading:**

50 points = quality of their information

25 points = if they provided complete information

25 points = any additional notes or information and questions

## Guide to Buying a Computer

Students were instructed to:

1. Browse through computer magazines and then name three magazines and three online resources they have reviewed.
2. Think about how much they want to spend on a computer system and whether or not they would be willing to buy older or used technology to meet a budget. They should decide on a budget and stick and provide the range on the line provided. Budget range is \$\_\_\_\_\_.
3. Make a list of three ways they plan to use a computer.
4. Students were instructed to fill in a table to complete a portion of a **Guide to Buying a Computer**.

**Making the assignment:** This project should be assigned to individuals. Students should fill in the table in the textbook.

**Deliverables:** Completed table.

### Grading:

75 points = quality of their notes

25 points = page references

25 point = questions that are thoughtful

## Visual Workshop

**Based on the image in the Figure students can set up their own Web-based email account:**

1. Students can follow these instructions:
  - Get a Web-based Gmail account using your own computer, or a public computer if you do not own a computer, yet.
  - In the Address bar of your browser, enter [www.gmail.com](http://www.gmail.com).
  - When the Gmail window appears, click the button labeled Create an account.
  - Follow the directions to enter your first name, last name, and login name.
  - Click the check availability button. If the login name you want is already in use, you'll have to try a different one, again clicking the check availability button.

**Deliverable:** Students should be able to send and receive email through the new account.