STUDY GUIDE FOR USE WITH

COMPUTERS IN TODAY'S WORLD

PREPARED BY
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Study Guide

for use with

Computers in Today's World

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Preface

This study guide has been designed to accompany *Computers in Today's World* by Ralph M. Stair, Jr., and published by Richard D. Irwin, Inc. It is divided into the same chapters as the book. For example, the material in Chapter 2 of the study guide corresponds to Chapter 2 in *Computers in Today's World*. Each chapter in the study guide follows the same format and has the same types of material. Each chapter in the study guide has the following elements:

1. Chapter Outline
2. Learning Objectives
3. Key Terms and Concepts
4. True-False and Multiple Choice
5. Matching
6. Fill in the Blank
7. Exercises
8. Selected Answers

The study guide can be an effective learning aid, and it can be a time saver in the long run. Before reading any chapter, you should study the learning objectives and the chapter glossary. It is also advisable to review the true-false, multiple choice, matching, and fill in the blank questions.

Then, the chapter in the book can be studied. Each chapter in the book also contains a number of learning aids. The preface of the book describes how the learning aids in the book can be used. After completing the chapter, review the learning objectives and glossary in the study guide, and then complete the true false, multiple choice, matching, and fill in the blank items. Selected answers are given for every chapter or supplement. You will probably find that you did not fully understand a few of the topics as a result of completing the various items and exercises in the study guide. This will help you to locate sections in the book that should be reviewed before going on to another chapter.

The study guide can also be used to help you prepare for an examination. By completing the study guide items and exercises, you will be able to quickly determine the topics that you should spend more time studying. If your examination will be a short answer or an essay exam, you may wish to review the exercises in the study guide and the end-of-chapter questions in the book. Some instructors use some of these items on short answer or essay type exams.

The study guide also contains Cases, Microcomputer Differences, Programming in BASIC: Some Additional Features, and Additional Articles. These sections will be discussed below:

Cases

The cases section contains integrative cases for the book. These cases can be used to integrate concepts presented throughout the book. Each case is related to one of the parts of the book. The cases are solved in the Instructor's Resource Manual.

Microcomputer Differences

The microcomputer differences section describes how the BASIC statements and concepts in Appendix B can be applied to popular microcomputers, including the IBM PC, the Apple II, the Radio Shack III, the Commodore 64, and the Atari 800/400 systems. Differences and enhancements for these microcomputers are described in this section. These microcomputer differences go beyond what is in the book.

Programming in BASIC: Some Additional Features

Programming in BASIC: Some Additional Features is a section that presents BASIC statements and concepts not discussed in the BASIC appendix in the book. These statements and concepts include user-defined functions, subroutines, data file statements, and matrix operations and statements. In addition, there are microcomputer differences included in this section and ample exercises. All exercises have been solved in the

Instructor's Resource Manual. In addition, the Instructor's Resource Manual contains transparency masters and a lecture guide for this material.

Additional Articles

The last section of this study guide contains Additional Articles. These articles reveal interesting applications, controversial issues, and other items of interest. These Additional Articles are current and not included in the book.

Contents

Chapter 1: Key Terms and Concepts

Artificial Intelligence: Makes the computer act like a person making intelligent decisions and judgments

Computer Aided Instruction: Using the computer to help one learn.

Computer Assisted Design: Using the computer to help design new products.

Computer Assisted Manufacturing: Using the computer to control equipment on the factory floor.

Computer System: Includes hardware, software, data, and data processing personnel.

Data Processing: The procedure of transforming data into desired output.

Data Processing System: The people, procedures, and devices used to produce desirable output.

Electronic Mail (E Mail):   Using the computer to route messages to the appropriate individuals.

Expert Systems: Another term for artificial intelligence.

Hardware: The components of a computer system.

Image Processing: Using the computer to enhance and gain a better understanding of images or pictures.

Information: Output that is used to help people make decisions.

Information Processing System: The people, procedures, and devices used to produce useful information that can be used in decision making.

Input: Capturing or obtaining the original data.

Output: The results of the processing activities.

Processing: The classifying, sorting, summarizing, reproducing, calculating, storing, and controlling of data.

Program: A series of instructions given to a computer system to make it perform a particular task.

Software: Another name for program.

Source Document: Original document containing data.

Word Processing: Using the computer to write and edit documents.

Videotex: A combination of computer and television technology which allows one to electronically browse through catalogs of products and services.

Chapter 1: Test Questions

True-False

_____ 1. It is estimated that by 1990 about 50 percent of the U.S. work force will depend upon some type of information processing

      A. True
      B. False

_____ 2. With the aid of computers cars, elevators, and vending machines can talk.

      A. True
      B. False

_____ 3. The first business computer was installed in 1945 at the General Electric Appliance Park in Kentucky.

      A. True
      B. False

_____ 4. CAD involves using large, expensive computers to design new products.

      A. True
      B. False

_____ 5. CAM involves using small computers to control equipment on the factory floor.

      A. True
      B. False

_____ 6. Word processing has not yet had a significant impact on day-to-day office procedures.

      A. True
      B. False

_____ 7. The idea behind teleconferencing is to make the conference as close to a real face-to-face meeting as possible.

      A. True
      B. False

_____ 8. Not quite half of the world's scientific knowledge has been obtained since the construction of the first electronic computer.

      A. True
      B. False

_____ 9. Small inexpensive personal computers have been used to diagnose potential problems and their remedies at the scene of an accident.

      A. True
      B. False

_____ 10. RELAX is a program that can be used on an IBM PC to help plan vacations.

      A. True
      B. False

_____ 11. As good as they are, computers can not help train, feed, condition, and analyze olympic competitors.

        A. True
        B. False

_____ 12. Videotex is used to help people with reading problems.

        A. True
        B. False

_____ 13. Computers have been used in the making of movies, such as TRON and the First Starfighter.

        A. True
        B. False

_____ 14. Because of the increasing popularity of personal computers, a number of hotels and travel packages come complete with personal computers.

        A. True
        B. False

_____ 15. CAI can be used to help people learn.

        A. True
        B. False

_____ 16. Some schools, like Clarkson University, are actually requiring all students to purchase and use personal computers.

        A. True
        B. False

_____ 17. The Russian computer, Agat, is far superior than personal computers made in the U.S.

        A. True
        B. False

_____ 18. In the U.S., Apple computers have been used by the Pentagon for use during war games.

        A. True
        B. False

_____ 19. The basic functions performed by a computer are: Input, Processing, Classifying, Sorting, Reproducing, Calculating, Storing, Controlling, and Output.

        A. True
        B. False

_____ 20. With image processing, computers are used to enhance and gain a better understanding of images or pictures.

        A. True
        B. False

_____ 21. In a manual data processing system, the filing cabinets provide temporary storage.

        A. True
        B. False

_____ 22. The series of instructions used to make a computer perform is called software.

        A. True
        B. False

Multiple Choice

_____ 23. The computer has the ability to:

        A. cut us free from mundane activities.
        B. slice deeply into profits.
        C. invade our personal privacy.
        D. All of the above.
        E. None of the above.

_____ 24. New products can be designed using:

        A. CAD.
        B. CAM.
        C. CAI.
        D. All of the above.
        E. None of the above.

_____ 25. Some word processing programs have dictionaries with as many as:

        A. 100 words.
        B. 1,000 words.
        C. 10,000 words.
        D. 100,000 words.

_____ 26. VTS 1.5 is an example of:

        A. hardware.
        B. software.
        C. teleconferencing.
        D. Two of the above.
        E. None of the above.

_____ 27. Fast computers can make:

        A. hundreds of computations per second.
        B. thousands of computations per second.
        C. hundreds of thousands of computations per second.
        D. millions of computations per second.

_____ 28. Computers can be used to:

        A. entertain you.
        B. educate you.
        C. plan your budget.
        D. Two of the above.
        E. All of the above.

_____ 29. Sorting is part of:

        A. Input.
        B. Output.
        C. Output.

_____ 30. Hardware for a computer system is similar to:
   A. the instructions that are given to a clerical system.
   B. the equipment in a clerical data processing system.
   C. the input data that is used in a clerical processing system.
   D. the output that is generated from a clerical processing system.
   E. None of the above.

Matching

a. voice response units
b. FAX
c. Reflex
d. CAI
e. input

f. electronic mail
g. local area networks
h. Videotex
i. SCI
j. computer system

_____ 1. It includes hardware, software, data, and data processing personnel.

_____ 2. It is used in education.

_____ 3. Allows machines to speak.

_____ 4. Software to help people lose weight.

_____ 5. Develops weapons systems for the Department of Defense.

_____ 6. An exciting innovation in office automation.

_____ 7. Is used to transmit both graphical data and alphanumeric data from one location to another.

_____ 8. Involves capturing or obtaining the original data.

_____ 9. Are used to unify much of the traditional equipment found in the office.

_____ 10. Allows you to electronically browse through catalogs of products and services.

Fill-In-the-Blanks

1. _____ is used to control equipment on the factory floor.

2. _____ allows companies to electronically store, rearrange, and print key paragraphs.

3. _____ makes the computer act like a person making intelligent decisions and judgments.

4. _____ is the function that includes reproducing and storing.

5. _____ involves using the computer to enhance and gain a better understanding of images or pictures.

6. _____ is the raw material or input to any data processing system.

7. _____ is output that can be used to help people make decisions.

8. _____ was used in the manual data processing system for temporary storage.

9. _____ involves transforming data into information.

10. _____ contains the original data for use in the data processing system.

NAME_____ ID NUMBER _____

COURSE _____ SECTION _____ DATE ____/____/____

Exercise 1-1

Describe the functions of data processing.

NAME_____ ID NUMBER _____

COURSE _____ SECTION _____ DATE _____/_____/_____

Exercise 1-2

In the space provided below, summarize an article from a newspaper or magazine that relates to computers and data processing.

NAME_____ ID NUMBER _____

COURSE _____ SECTION _____ DATE ___/___/_____

Exercise 1-3

Briefly describe the components of a manual data processing system and develop a set of instructions that will make the manual data processing system perform a business related task.

Chapter 1: Answers

True-False and Multiple Choice

1.	A	11.	B	21.	B
3.	B	13.	B	23.	D
5.	A	15.	A	25.	D
7.	A	17.	B	27.	D
9.	A	19.	B	29.	B

Matching

1. j
3. a
5. i
7. b
9. g

Fill-in-the-Blanks

1. CAM
3. Artificial Intelligence
5. Image Processing
7. Information
9. Information Processing

Chapter 2

The Evolution of Computer Systems

Chapter Outline

After completing Chapter 2, you will be able to:

List early mechanical calculating devices.

Trace the beginning of the computer age.

Describe the various computer generations.

Chapter 2: Key Terms and Concepts

Abacus: One of the first recognized mechanical devices to make computations.

Analytical Engine: A calculating machine designed by Babbage which was to contain memory, and store numbers and computations.

Difference Engine: A device for computing logarithms which was designed, but never fully constructed, by Babbage.

EDVAC: An electronic computing device similar to the ENIAC although smaller, faster, and having greater capacity. It was built in 1952.

ENIAC   The first all electronic digital computer developed by Mauchly and Eckert around 1946.

Fifth Generation: The next generation of computers which will rely on major advances in very large scale integration.

First Generation: Started in 1951 with the development of UNIVAC I. The common characteristic of first generation computers is the use of vacuum tubes.

Fourth Generation: Started in the early 1970's. These computers are marked by the use of large scale integration and the use of microprocessors.

MARK I: An electromechanical device developed by Howard Aiken in 1937. Another name for this device is the automatic sequence controlled calculator.

Second Generation: Started about 1959. These computers have the common characteristic of using transistors in place of vacuum tubes.

Tabulating Machine: A punched card device designed by Herman Hollerith. It came about as an aid in processing census data.

Third Generation: Started about 1965 with the introduction of the IBM 360 computer. These computers have the common characteristic of integrated and miniaturized circuits in place of transistors.

UNIVAC I: The first commercially available computer which was built by Eckert and Mauchly.