高等职业教育“十二五”规划教材

计算机专业英语

陈　莉　康丽军　主　编
宋学坤　副主编

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内 容 简 介

本书选编了计算机知识和英语运用能力的内容，包括大量与计算机专业基础、专业技术及专业前沿知识相关的英文资料。根据知识点，全书分为 8 个单元，分别介绍计算机基础知识、计算机硬件结构、计算机软件及应用、计算机安全与病毒防治、计算机网络与互联网、电子商务知识、数据库系统、人工智能与数据挖掘等方面的专业英语知识。本书选材新颖，涉及面广，实用性强，各单元后都附有新单词及短语、习题，帮助读者巩固所学知识。在每个单元之后还介绍了专业英语的有关特点、语法知识及构词法等，以帮助读者掌握专业英语的翻译要领，提高读者的综合英语水平。最后，在书后还附有计算机常用专业词汇及常用缩略词，便于读者查找。

本书适合作为高职高专院校计算机及相关专业的“计算机专业英语”课程教材，也可作为计算机专业技术人员的学习和参考用书。

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前　言

“计算机专业英语”是涉及计算机知识及英语运用能力的一门综合课程，是高职高专计算机专业学生重要的专业课。其教学目标在于扩大学生的专业词汇量，提高学生阅读国外计算机专业文章的能力，同时使学生获得更多的计算机信息方面的新知识和新的发展动态。

本书具有如下特点。

（1）根据计算机专业的需要划分单元结构，突出计算机专业中与英语紧密相关的内容。精选通俗易懂的专业材料作为专业英语教材的载体，力求收录本专业最新、最实用的词汇和用语，从而使本书既具有专业特色，又充分体现英语教学规律。

（2）在每篇文章之后都提供了与文章联系紧密的练习，具有一定的针对性，有利于检验学生掌握课文的程度，旨在达到即学、即练、即会的学习效果；精编介绍了计算机最新技术及应用的自主阅读材料，在提高读者计算机专业英语阅读水平的同时，也扩展了读者的专业知识面。参考译文直接附于课文之后，便于读者查阅，并及时解决阅读中遇到的问题。

（3）为了便于读者掌握专业英语的翻译技巧，书后附录了专业词汇及缩略词。

本书还介绍了专业英语语言的结构特点、语法知识，科技英语文章的翻译方法、技巧等，对提高学生的英语读写能力有很大的帮助。

本书按照“系统、新颖、实用”的原则，设置了计算机基础知识、计算机硬件结构、计算机软件及应用、计算机安全与病毒防治、计算机网络与因特网、电子商务与电子政务、数据库系统、人工智能与数据挖掘等内容。全书共分 8 个相对独立的单元，每个单元由多篇精读文章和自主阅读材料组成，同时在每篇文章后都提供了配套的练习题。

本书由山东师范大学的陈莉老师和太原大学计算机系的康丽军老师担任主编；由河南中医学院信息技术学院的宋学坤老师担任副主编。

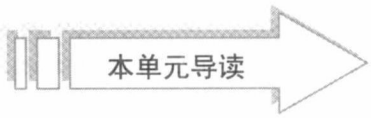
本书收录的文章是从众多国外教材、网上文章及国内教材中选编的，既包括了计算机方面的基础知识又涵盖了一些前沿知识，具有一定的代表性，通俗易懂、难度适中。节选的文章和译文的出处均体现在参考文献中，在此，向相关作者表示感谢。

由于编者水平有限，书中难免有错误及不当之处，恳请读者批评指正。

编　者

目　录

UNIT ONE
INTRODUCTION TO COMPUTERS



本单元主要介绍计算机相关的基础知识，主要包括计算机的分类、计算机的发展过程、计算机的未来发展方向、计算机的正确使用及维护方法，使读者对计算机有一个全方位的了解和认识。

PASSAGE ONE FOUR KINDS OF COMPUTERS

TEXT

Computers are electronic devices that can follow instructions to accept input, process that input, and produce information. There are four types of computers: microcomputers, minicomputers, **mainframe** computers, and supercomputers.

Microcomputers, also known as personal computers, are small computers that can fit on a desktop. **Portable** microcomputers can fit in a briefcase or even in the palm of your hand. Microcomputers are used in homes, schools, and industries. Today nearly every field uses microcomputers.

One type of microcomputers that is rapidly growing in popularity is portable computer, which can be easily carried around. There are four **categories** of portable computers.

Laptops: laptops, which weigh between 10 and 16 pounds, may be **AC-powered**, battery-powered, or both. The AC-powered laptop weighs 12 to 16 pounds. The battery-powered laptop which weighs between 10 to 15 pounds, batteries included, can be carried on a shoulder strap.

Notebook PCs: notebook personal computers weigh between 5 and 10 pounds and can fit into most briefcases. It is especially valuable in locations where electrical connections are not available. Notebook PC are the most popular portable computers today.

Subnotebooks: subnotebooks are for frequent flyers and life-on-the-road types. The users give up a full-size display screen and keyboard in exchange for less weight. Weighting between 2 and 6 pounds, these computers fit easily into a briefcase.

Personal Digital Assistants: much smaller even than the subnotebooks. **Personal Digital Assistants** (PDAs) weigh from 1 to 4 pounds. The typical PDA combines pen input, writing recognition, personal organizational tools and communication capabilities in a very small package.

Minicomputers, also knows as **midrange** computers, are desk-sized machines. They fall into between microcomputers and mainframes in processing speed and data-storing capacity. Medium-size companies or departments of large companies typically use them for specific purposes. For example, they might use them to do research or to monitor a particular manufacturing process. Smaller-size companies typically use minicomputers for their general data processing needs, such as accounting.

Mainframe computers are larger computers occupying specially wired, air-conditioned rooms and capable of great processing speeds and data storage. They are used by large organizations, such as business, banks, universities, government agencies to handle millions of transactions. For example, insurance companies use mainframes to process information about millions of **policyholders**.

Supercomputers are special, high-capacity computers used by very large organizations **principally** for research purposes. Among their uses are oil exploration and worldwide weather forecasting.

In general, a computer's type is determined by the following seven factors.

The type of CPU. Microcomputers use microprocessors. The larger computers tend to use CPU made up of separate, high-speed, **sophisticated components**.

The amount of main memory the CPU can use. A computer equipped with a large amount of main memory can support more sophisticated programs and can even hold several different programs in memory at the same time.

The capacity of the storage devices. The larger computers systems tend to be equipped with higher capacity storage devices.

The speed of the output devices. The speed of microcomputer output devices tends to be rated in terms of the number of characters per second (cps) that can be printed usually in tens and hundreds of cps. Larger computers' output devices are faster and are usually rated at speeds of hundreds or thousands of lines that can be printed per minute.

The processing speed in millions of instructions per second (mips). The term *instruction* is used here to describe a basic task the software asks the computer to perform while also identifying the data to be affected. The processing speed of the smaller computers ranges from 7 to 40 mips. The speed of large computers can be 30 to 150 mips or more, and supercomputers can process more than 200 mips. In other words, a mainframe computer can process your data a great deal faster than a microcomputer can.

The number of users that can access the computer at one time. Most small computers can support only a single user, some can support as many as two or three at a time. Large computers can support hundreds of users **simultaneously**.

The cost of the computer system. Business systems can cost as little as $500 (for a microcomputer) or as much as $10 million (for a mainframe)and much more for supercomputer.

WORDS AND EXPRESSIONS

mainframe ['mein,freim] *n.*	主机，大型机
portable ['pɔ:təbl, 'pəu-] *adj.*	便携式
categories ['kætigəris] *n.*	分类，类别（category 的复数）
laptop ['læptɔp] *n.*	膝上型轻便电脑
AC-powered	交流电供电
subnotebook[sʌb'nəutbu:k] *n.*	小型笔记本电脑
Personal Digital Assistants	个人数码助手（缩写为 PDA）
midrange ['mid,reindʒ] *n.*	中列数
policyholder ['pɔlisi,həuldə] *n.*	投保人，保险客户
principally ['prinsəpəli] *adv.*	主要地
sophisticated component	精细部件
simultancously [saiməl'teiniəsli] *adv.*	同时地

EXERCISES

I. Match the items listed in the following two columns.

1. electronic device	a. 便携式电脑
2. portable computer	b. 电池供电
3. processing speed	c. 大型计算机
4. storage device	d. 精细部件
5. battery-power	e. 个人数字助手
6. mainframe computers	f. 电子设备
7. Personal Digital Assistants	g. 处理速度
8. sophisticated components	h. 存储设备

Ⅱ. Mark the following sentences with true or false according to the passage.

1. Portable computers can fit in a briefcase or even in the palm of your hand.

2. Subnotebooks have a full-size display screen and keyboard.

3. The capacity of the storage devices is a main factor that affects the property of computers.

4. The term *instruction* used in the passage only describe a basic task the software asks the computer to perform.

5. Ordinary users have chances to contact with supercomputers.

III. Translation.

1. Computers are electronic devices that follow instructions to _____（接收输入，处理输入数据并产生信息）.

2. The notebook PC is especially valuable in locations _____（那些连接电源不方便的地方）.

3. Supercomputer are _____（专用的、大容量的计算机）used by very large organizations principally for research purposes.

4. A computer equipped with a large amount of main memory can support more sophisticated programs and even _____（能同时在内存中容纳多个不同的程序）.

5. The processing speed of the smaller computers _____（为 7～40 个）mips.

参考译文

4 类计算机

计算机是根据指令接收输入，处理输入数据并产生信息的电子设备。有 4 种类型的计算机：微型机、小型机、大型机和巨型机。

微型机，亦被称为个人计算机，是可以放在桌面上的小型计算机。便携式微型机可以放入手提箱，甚至手掌中。微型机被用于家庭、学校及工业中。如今几乎每一领域都在使用微型机。

正在迅速普及的一种微型机是便携式计算机，易于携带。有 4 种类型的便携式计算机。

膝上电脑：其重量在 10～16 磅之间，可以是交流供电、电池供电，或两者均可。交流供电的膝上电脑重量在 12～16 磅之间；电池供电的膝上电脑的重量包括电池在内是 10～15 磅之间，可以用肩带背起来携带。

笔记本电脑：其重量在 5～10 磅之间，可放入大多数公文包中，它主要是用于电源连接不方便的地方。笔记本电脑是如今最流行的便携式电脑。

超轻薄笔记本电脑：用于经常出差在路上的一类人。超轻薄笔记本电脑用户为了较轻的重量放弃了完整的显示屏幕和键盘的标准尺寸，其重量在 2～6 磅之间，可以很容易地放入公文包中。

个人数字助手：比超轻薄笔记本电脑还要小得多，其重量在 1～4 磅之间。典型的个人数字助手将手写笔输入、书写识别、个人编排工具和通信功能结合起来放入小包中。

小型机，也被称为中型机，是像书桌大小的机器。处理速度和数据存储能力介于微型机和大型机之间。中型公司或大型公司的部门一般将它们用于特殊用途。例如，可以使用它们作研究或监视某一个特殊生产过程。小型公司一般使用小型机进行总的数据处理，如统计。

大型机是较大的计算机，放置在装有专线、空调的房间中，具有很快的处理速度和很大的数据存储量。它们通常是由一些大的组织机构使用，如商业部门、银行、大学、政府机构，以处理数以百万计的事务。例如，保险公司使用大型机处理数以百万计的保险客户的信息。

巨型机是由非常大的机构主要用于研究的大容量专用计算机。在这些应用当中包括有石油勘探和世界范围的天气预报。

一般说来，计算机的类型由下列 7 个因素决定。

CPU 的类型。微型计算机使用微处理器。较大计算机趋向于使用由独立的、高速的、精细零部件构成的 CPU。

CPU 能够使用的主存储器的总量。配备有大量主存储器的计算机可以支持更复杂的程序运行，并且能同时容纳多个不同的程序在内存中。

存储设备的容量。较大计算机系统趋向于配置较大容量的存储设备。

输出设备的速度。微机输出设备的速度趋向于用每秒钟能打印的字符数（cps）来衡量，通常每秒为几十个或几百个字符。较大计算机的输出设备的速度也较快，通常以每分钟可打印几百或几千行的速度来衡量。

处理速度用每秒钟百万条指令（mips）来度量。这里使用的术语“指令”是描述软件要求计算机完成的基本任务，并且也可以确定受影响的数据。较小计算机的处理速度为 7～40mips。大型计算机的处理速度能达到 30～150mips 或更多。巨型计算机的处理速度超过 200mips。换句话说，大型计算机处理数据的速度要比微型计算机快得多。

可以同时访问计算机的用户数量。大多数小型计算机只能支持单个用户访问，有些计算机可以同时支持两个或三个用户同时访问，大型计算机则可以支持几百个用户同时使用。

计算机系统的价格。商用计算机系统的价格可以少到 500 美元（一台微机），多到 1000 万美元（一台大型机），巨型计算机则花费更多。

参考答案

I. 1-f 2-a 3-g 4-h 5-b 6-c 7-e 8-d

II. 1.F 2.F 3.T 4.F 5.T

III.

1. accept input, process that input, and produce information
2. electrical connections are not available
3. special, high-capacity computers
4. hold several different programs in memory at the same time
5. ranges from 7 to 40

PASSAGE TWO COMPUTER GENERATIONS

TEXT

The development of computers has experienced four generations till now. Let's take a look at each of them.

1. The first generation of computers (1946—1958)

The first generation of computers was characterized by the main feature of the ENIAC-vacuum tubes. In 1950s, several other computers were built, each contributing **significant** advancements, such as binary arithmetic, random access, and the concept of stored programs. These computer concepts are common in today's computers.

2. The second generation of computers (1959—1964)

To most people, the invention of the **transistor** meant small **portable** radios. But to those in the data processing business, it signaled the start of the second generation of computer. The transistor meant more powerful, more reliable, and less expensive computers that would occupy less space and give off less heat than did vacuum-tube-powered computers.

The expense item should be emphasized. During the first, second, and part of the third generations, the cost of a computer represented a significant portion of a company's **budget**. Computers were expensive. Significant **innovations** have resulted in enormous increases in computer performance and obvious reductions in price. This trend, established with the introduction of second-generation computers, continues today.

3. he third generation of computer (1964—1971)

On April 7, 1964, IBM announced their IBM system/360 computers. It was considered to be one of the most important events in the history of computer. It is the beginning of the third generation of computer, which was characterized by the integrated circuits or IC.

The **compatibility** problems of second-generation computers were almost **eliminated** in third-generation computers. In other ways, third-generation computers work so quickly that they provide the **capacity** to run more than one program **concurrently**. For example, at any given time the computer might be printing payroll checks, accepting orders, and testing programs.

4. The fourth generation of computers (1971—Now)

The start of the fourth generation of computers was 1971. Large Scale Integrated Circuits became basic componets of computers. Our personal computers, or microcomputers, belong to this generation.

One of the most significant contributions of the fourth generation of computer is the microprocessor. The microprocessor can be contained on a single **silicon chip**. The first fully operational microprocessor was invented in 1971. And they have been developing very fast. This device costs less than a soft drink and can be found in everything from lifts to satellites.

Most computer producers classify their computers as being in the fourth generation of computer, and a few call theirs the "fifth generation". The first three generations were characterized by significant technological breakthroughs in electronics—vacuum tubes, then transistors, and then integrated circuits. Some people prefer to consider the start of the fourth generation as 1971, while some others argue that if we accept this **premise**, then there would probably have been a fifth, a sixth, and maybe seventh generation since 1971.

As science and technique are developing continually, new generations of the computer will emerge in the future.

WORDS AND EXPRESSIONS

significant [sig'nifikənt] *a.*	有意义的，重大的，重要的
transistor [træn'sistə, -'zis-, trɑ:n-] *n.*	晶体管
portable ['pɔ:təbl, 'pəu-] *a.*	轻便的，手提的，便携式的
budget ['bʌdʒit] *n.*	预算
innovation [ˌinəu'veiʃən] *n.*	改革，创新
compatibility [kəmˌpætə'biləti] *n.*	兼容性
eliminate [i'limineit] *v.*	排除，消除
capacity [kə'pæsəti] *n.*	能力
concurrently [kən'kʌrənt] *adv.*	并发地，协作地，一致地
silicon chip	硅芯片
premise [pri'maiz, 'premis] *n.*	前提

EXERCISES

I. Match the items listed in the following two columns.

1. integrated circuits　　a. 随机访问

2. vacuum tubes　　b. 电子管
3. microprocessor　　c. 存储程序
4. silicon chip　　d. 集成电路
5. binary arithmetic　　e. 微处理器
6. random access　　f. 二进制运算
7. stored programs　　g. 硅芯片

II. Mark the following sentences with true or false according to the passage.

1. The development of computer has experienced four generations till now.

2. The first generation of computer was characterized by the main feature of the microprocessor.

3. The compatibility problems of second-generation computers were almost eliminated in third-generation computers.

4. Microprocessor costs less than a soft drink and can be found in everything from lifts to satellites.

5. During the first, second, and part of the third generations, computers were not expensive.

III. Translation.

1. _____（随着科学技术的不断发展）, new generations of the computer will emerge in the future.

2. The microprocessor _____（被包容在）a single silicon chip.

3. Significant innovations have resulted in _____（计算机功能的大大增加）and obvious reductions in price.

4. Our personal computers, or microcomputers, _____（属于第 4 代）. _____（突出贡献之一）of this generation is the microprocessor.

参考译文

计算机的发展阶段

计算机发展到现在已经经历了 4 代，让我们分别去了解它们。

1. 第 1 代计算机（1946—1958 年）

第 1 代计算机是以 ENIAC 电子管为主要特征的计算机。在 20 世纪 50 年代，其他几种计算机也被制造出来，每一种计算机都有明显的进步，如二进制运算、随机访问以及存储程序的概念。今天这些概念已很普遍。

2. 第 2 代计算机（1959—1964 年）

对于大多数人来说，晶体管的发明意味着小型手提收音机。而对于那些数据处理行业的人来说，它标志着第 2 代计算机的开始。晶体管意味着功能更强大、更可靠、更便宜的计算机，这些计算机占用更少的空间，同时又比电子管计算机散发更少的热量。

费用问题也该强调一下。在第 1 代、第 2 代和第 3 代的部分时期，计算机的花费成本