PETS

全国英语等级考试灯塔系列丛书

根据教育部最新考试大纲编写

全国英语

等级考试教材(四级)

全国英语等级考试教材编写组 编

谢江南 主编

中国国际广播出版社

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（四级）

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前　　言

全国英语等级考试体系(Public English Test System，简称 PETS)是由教育部考试中心设计开发的系列考试。PETS 考试面向社会，分为 5 个等级。它的目的是根据我国英语教学实际和社会发展的需要，在同一能力量表的基础上合理设置各级考试的评价标准，重点测试听、说、读、写的能力，确保相同级别不同考次之间考生成绩的等值，逐步将有关的升学、出国、自学考试联系起来，使考生成绩使用达到多样化。

全国英语等级考试第四级为 5 个级别中的中上级。通过该级考试的考生，其英语水平基本满足攻读高院校硕士研究生(非英语专业)的需求。

本教材共有 12 单元，每单元一个主题：科技、经济、政治、文化、教育等。每单元内容包括：

1. 会话

根据单元主题设计 2 段会话材料。会话力求情景真实、语言地道得体，主要用于训练听说能力。

2. 课文

每单元有一篇主打课文，课文内容体现单元主题。

3. 单词和短语

单词和短语是各单元课文中出现的重点、疑难单词和短语，该部分给出了单词的国际音标、词性、中文释义和短语的中文释义。

4. 注释

注释针对课文，主要包括两方面的内容：(1)从语法、词汇等方面点拨课文中的难点；(2)介绍相关的文化背景知识，加深学习者对课文的理解。

5. 练习

练习是针对各单元的主题而设计的，该部分题型与 PETS 第四级考试大纲一致，以便于学习者备考。

6. 补充阅读

为使学习者对相关话题进行更深入的了解，并提高阅读能力，在每单元最后都有一篇补充读物。

本教材最后有5个附录，包括：(1)功能意念表；(2)语言技能表；(3)听力练习录音稿；(4)课后练习答案；(5)单词和短语总表。

随书赠送的MP3光盘，内容包括会话、课文、生词、课后听力题材料以及补充阅读材料的录音，可以在电脑，以及具有MP3功能的CD机、VCD机和DVD机上播放。

本教材另配有听力练习的录音磁带。

附：全国英语等级考试问答

一、什么是全国英语等级考试？

全国英语等级考试(Public English Test System，简称PETS)是教育部考试中心设计并负责的全国性英语水平考试体系。作为中、英两国政府的教育交流合作项目，在设计过程中它得到了英国专家的技术支持。共有五个级别：

PETS—1是初始级，通过该级考试的考生，其英语基本符合诸如出租车司机、宾馆行李员、门卫、交通警等工作，以及同层次其它工作在对外交往中的基本需要。(其中PETS—1下设一个附属级PETS—1B)

PETS—2是中下级，通过该级考试的考生，其英语水平基本满足进入高等院校继续学习的要求，同时也基本符合诸如宾馆前台服务员、一般银行职员、涉外企业一般员工，以及同层次其他工作在对外交往中的基本需要。

PETS—3是中间级，通过该级考试的考生，其英语已达到高等教育自学考试非英语专业本科毕业水平或符合普通高校非英语专业本科毕业的要求，基本符合企事业单位行政秘书、经理助理、初级科技术人员、外企职员的工作，以及同层次其他工作在对外交往中的基本需要。

PETS—4是中上级，通过该级考试的考生，其英语水平基本满足攻读高等院校硕士研究生非英语专业的需要，基本符合一般专业技术人员或研究人员、现代企业经理等工作对英语的基本要求。

PETS—5是最高级，通过该级考试的考生，其英语水平基本满足在国外攻读硕士研究生非英语专业或从事学术研究工作的需要，该水平的英语也能满足他们在国内外从事专业和管理工作的基本需要。

这五个级别的考试标准建立在同一能力量表上，相互之间既有明显的区别又有内在的联系。

二、为什么建立PETS？

建立PETS的目的是为改进原有的英语教育考试提供一套科学、合理的评价标准。改变现行英语考试过于封闭、与社会需求脱节的被动局面，向社会提供一个面向公众的英语考试体系，在全国范围内促进英语的普及与提高，适应我国改革开放和对外交往不断扩大的形势。通过测试应试者的水平，颁发英语等级证书，满足社会上英语能力鉴定和人才市场的需求。对考生听、说、读、写等能力进行全面考查。促进英语教学改革，扭转“听不懂，讲不出，难以与外国

人直接交流”的不利局面。多级别的英语考试体系，也符合当今社会终身学习，终身教育的时代潮流。

三、PETS 都考查哪些英语技能？

PETS 考查的能力是建立在“交际语言行为模式”上。这种模式以语言交际需要为掌握外语的目的，将语言能力分为“接受”，“产出”，“互动”等。根据各种情景和任务，在特定主题和话语下，结合相关的语言行为进行教学或考查。这些能力与通常所说的“听”、“说”、“读”、“写”等能力的关系是：

接受能力——读和听；

产出能力——写和说；

互动能力——书面和口语的直接交流。

PETS 重点考查交际能力，但并不完全排斥对语言知识（语法、词汇等）的考查。所以，PETS 所考查的内容包括：听力、语言知识、阅读、写作、口语。

四、PETS 有哪些题型？

为提高考试的有效性（效度），PETS 从各级别交际能力考查的实际需求出发设置题型，主要有：

客观性试题——多项选择、选择配伍等

半客观性试题——改错、填空、简单概括等

主观性试题——短文写作、翻译、口试等

各级考试采用的具体题型见相关的考试大纲。

五、什么人可以参加 PETS 考试？

参加考试是考生的个人行为。PETS 在考生资格方面，无年龄、职业、以及受教育程度的限制，原则上任何人都可参加。人们可以根据自己的英语水平选择参加其中任何一个级别的考试。不必按部就班，即具有低级别的证书后才能参加高级别的考试。但是，一次只能参加其中一个级别的考试。

六、PETS 成绩的使用范围和有效期是如何规定的？

在 PETS 等级描述中给出了各级考试成绩的使用范围，仅供考生个人和考生成绩使用者参考。

教育部考试中心负责解释 PETS 各级考试的水平；考生成绩的使用权在录取部门或用人单位。

七、怎样才能得到 PETS 的等级证书？

PETS 考试将笔试和口试分成两个相对独立的考查成分。

笔试成绩是听力、英语知识运用、阅读理解和写作部分成绩的总和，满分 100 分，60 分以上（含 60 分）为合格。口试满分 5 分，3 分以上（含 3 分）为合格。

笔试和口试均合格者方可得到教育部考试中心颁发的相应级别的合格证书。

八、PETS 等级证书有什么作用和发展?

PETS 等级证书是人事部门考核和录用的重要依据,是英语水平的鉴定和择业的通行证。

全国英语等级考试设置的五个级别和一个附属级别,将逐步取代现有的多种英语考试,如中考、中职、高职外语考试、高中会考、自学考试公共英语课、成人高考以及公派出国外语水平考试等。

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UNIT 1

第一单元

SCIENCE AND TECHNOLOGY
科学与技术

·本章学习要求·

- 能够就计算机等常见话题进行口头表达。
- 能够正确理解生命科学、计算机信息技术等方面的科普文章。
- 了解和掌握一些简单的科技术语。
- 能够对科学技术的发展和应用做出比较客观的评价。
- 增强科技意识，关注科学技术发展的新动态。

Conversations

1

Alice: OK, last night you were supposed to read an article about human bones. Are there any comments about it?

Bob: well, to begin with, I was surprised to find out there were so much going-on in bones. I always assumed they were pretty lifeless.

Alice: Well, that's an assumption many people make. But the fact is bones are made of dynamic living tissue that requires continuous maintenance and repair.

Bob: Right. That's one of the things I found so fascinating about the article The Way the Bones Repair Themselves.

Alice: Ok. So can you tell us how the bones repair themselves?

Bob: Sure. See, there are two groups of different types of specialized cells in the bone that work together to do it. The first group goes to an area of the bone that needs repair. This group of cells produces the chemical that actually breaks down the bone tissue, and leaves a hole in it. After that the second group of specialized cells comes and produces the new tissue that fills in the hole that was made by the first group.

Alice: Very good. This is a very complex process. In fact, the scientists who study human bones don't completely understand it yet. They are still trying to find out how it all actually works. Specifically, because sometimes after the first group of cells leaves a hole in the bone tissue, for some reason, the second group doesn't completely fill in the hole. And this can cause real problems. It can actually lead to a disease in which the bone becomes weak and is easily broken.

Bob: Ok, I get it. So if the scientists can figure out what makes the specialized cells work, maybe they can find a way to make sure the second group of cells completely fills the hole in the bone tissue every time. That'll prevent the disease from occurring.

2

Bob: Did you know that astronauts have made commercial products in space?

Alice: No, I wasn't aware of that. What kind of products?

Bob: Tiny plastic beads.

Alice: Beads? Do you mean to tell me that astronauts have nothing better to do than make jewelry beads in space? It seems to me they could make more useful things out there.

Bob: Oh, but these beads aren't for jewelry. They can be used for many scientific purposes, from conducting cancer research to calibrating microscopes.

Alice: That sounds better, but why make such objects in space rather than on earth?

Bob: Because earth gravitational pull affects the beads. The beads produced on earth are distorted, not exactly round. The ones made in space are precise spheres.

Passage

Silicon[1] and Beyond

For all of its complexity, our modern computer age has been built upon the simplest of foundations: silicon. The primary ingredients of beach sand, silicon is the most abundant element in nature, save for oxygen. But like castles made of sand, today's silicon chips may prove—in the long view—to be less than enduring. The new millennium will likely bring waves of new microprocessor and memory technologies that could increase our computer power exponentially and perhaps eventually displace silicon chips.

Silicon is far from finished as a computer engine platform[2], however. A naturally good semiconductor (either a conductor or insulator of electricity), silicon is widely available and relatively cheap, making it an ideal base for a computer chip.

And while today's method of etching tiny transistors into silicon with ultraviolet light may be reaching its limits, new lithography techniques using X rays[3] or electron beams[4] could create circuitry that's far smaller than the microscopic lines on today's chips. At the same time, advances in nanotechnology[5] are permitting the design of transistors whose width is measured in mere atoms. Together, these developments could pave the way for putting billions of transistors on a single silicon chip. Moore's Law[6] (stating that the number of transistors on a chip doubles every 18 months) would remain valid for many years to come. Parallel computing[7] efforts such as IBM[8]'s Blue Gene[9] project will increase computational power dramatically as well.

Still, many scientists believe that the transistor-on-a-chip method of computing is only the first phase in what could be a dramatically diverse group of technologies that power our computers in the new millennium. Using light, rather than electricity, to transmit bits of data could achieve computing speeds that are almost unimaginable today. Optical fibers carrying pulses of light are already replacing copper wires bearing electrical signals in telecommunication systems. But carrying over the same technology to computer chips is no simple task. Replacing tiny transistors with tiny lasers brings with it a host of problems, not the least of which are how to miniaturize, power, and cool such lasers.

The potential of optical computing, however, is too compelling not to pursue. Bell laboratories[10] recently showed just how alluring it might be when it unveiled an optical networking system that could carry 400 billion bits per second—or roughly the entire traffic of the Internet—over a singly strand of fiber. And if the Internet is to shoulder our information traffic in the new century, some form of optical computing might be necessary.

NASA[11] is among those seeking ways to make optical computers practical. Research at the Marshall Space Flight Center[12] in Alabama is centered on ways to make thin polymer films on a bed of quartz carry units of light, or photons. Today, the process still generates too much heat to be practical, but NASA hopes that microgravity experiments aboard the space shuttle (where heat-produced convection is not an issue) might lead to a breakthrough.

An even more intriguing possibility is to pattern future man-made computers after the highly evolved computers all around us: living creatures. As scientists begin to map out the genetic makeup and behavioral patterns of lowly creatures such as roundworms and ants, the probability looms that we can use these living schematics to develop highly complex programming code that could not only make our computer chips faster but make them smarter as well. Already, biologists and computer scientists are teaming up to build biologically inspired robots, or biobots[13], that accurately mimic the actions of animals. One example of this is a robotic worm developed at the University of Oregon[14]'s Institute of Neuroscience.

While artificially intelligent computers will likely be rooted in silicon for some time, scientists are now investigating ways to use biological elements themselves as components. Researchers at the Georgia Institute of Technology[15], for example, are working on ways to marry living neurons—an organism's signal transmitters—with silicon circuits. Using neurons from leeches, the Georgia Tech team has been able to do data bits[16], it's possible to have chemically combined molecular chains "grow" answers in a test tube in a rapid-Fire fashion that's faster than today's supercomputers[17]. Duke university[18] researchers recently devised a method to put DNA[19] molecules on glass chips, for example, which could make it far easier to find the correct solutions among a living sea of computations.

Maybe the chief trouble with using living things for computing is that making sense of what appears to be chaotic activity can be very difficult. But even chaos itself may prove to be a valuable computing tool. So-called quantum computers may someday calculate answers using atoms and the laws of quantum mechanics[20], actually leveraging the fact that atoms seem to deliver all possible answers at the same time. Researchers at IBM, Hewlett-Packard[21], Los Alamos National Laboratory[22], and elsewhere are actively working on quantum computer, and many scientists believe the results, though perhaps decades away, could be a greater leap in computing power than from the slide rule[23] to the PC.

Words and Expressions

bit [bit] = binary digit *n.* 比特,(二进制)位,存储设备中的最小信息容量单位

breakthrough ['breik'θruː] *n.* 突破

circuitry ['səːkitri] *n.* 电路,线路

compelling [kəm'peliŋ] *adj.* 引人注目的

conductor [kən'dʌktə(r)] *n.* 导体

convection [kən'vekʃən] *n.* 传送,对流

etch [etʃ] *vt.* 蚀刻,铭刻

exponentially [ˌekspəu'nenʃəli] *adv.* 指数地

fiber ['faibə] *n.* 光纤

ingredient [in'griːdiənt] *n.* 成分,因素

insulator ['insjuleitə] *n.* 绝缘体,绝热器

intriguing [in'triːgiŋ] *adj.* 迷人的,有迷惑力的,引起兴趣(或好奇心)的

leech [liːtʃ] *n.* 水蛭

leverage ['liːvəridʒ] *n.* 凭借,借助,影响

lithography [li'θɔgrəfi] *n.* 平版印刷术

loom [luːm] *v.* 隐现,迫近

marry ['mæri] *vt.* 连接,啮合

microgravity ['maikrəugræviti] *n.* 微重力

microprocessor [maikrəu'prəusesə(r)] *n.* 微处理器

microscopic [maikrə'skɔpik] *adj.* 用显微镜可见的,精微的

millennium [mi'leniəm] *n.* 千年

mimic ['mimik] *vt.* 模仿,摹拟

miniaturize ['miniətʃəraiz] *vt.* 使小型化

molecular [məu'lekjulə] *adj.* 分子的,由分子组成的

neuron ['njuərɔn] *n.* 神经细胞,神经元

optical ['ɔptikəl] *adj.* 光学的

photon ['fəutɔn] *n.* 光子

polymer ['pɔlimə] *n.* 聚合体,聚合物

quantum ['kwɔntən] *n.* 量子

quartz [kwɔːts] *n.* 石英

roundworm ['raundwəːm] *n.* 蛔虫

semiconductor ['semikən'dʌktə] *n.* 半导体

silicon ['silikən] *n.* 硅,硅元素

strand [strænd] *n.* 一束

transistor [træn'zistə] *n.* 晶体管

telecommunication ['telikəmjuːni'keiʃən] *n.* 电讯,电信学

ultraviolet ['ʌltrə'vaiəlit] *adj.* 紫外线的,紫外的

Notes

1. silicon 硅,一种非金属元素,广泛存在于地壳的硅酸盐和硅石中,与其他材料掺杂或结合,用于制造玻璃、半导体材料、混凝土、砖、耐火材料、陶瓷等。
2. engine platform 操作平台,泛指电脑硬件、操作系统、应用软件的组合框架。
3. X-rays X射线,由德国仑琴教授在1895年所发现。这种由真空管发出的能穿透物体的辐射线,在电磁光谱上能量较可见光强,波长较短,频率较高。
4. electron beam 电子束
5. nanotechnology 纳米技术。纳米(nm)如同厘米、分米和米一样,是度量长度的单位,一纳米等于十亿分之一米。纳米技术是20世纪90年代出现的一门新兴技术,它是在0.10至100纳米尺度的空间内,研究电