广东省高等教育自学考试指定教材

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农业科技英语

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组 编 前 言

《中华人民共和国高等教育法》明确规定："国家实行高等教育自学考试制度，经考试合格的，发给相应的学历证书或者其他学业证书。""公民通过接受高等教育或者自学，其学业水平达到国家规定的学位标准，可以向学位授予单位申请授予相应的学位。"

由于高等、中专教育自学考试制度非常便利于在职和非在职人士通过自学提高自身科学文化素质、考取国家学历文凭，因此受到社会各界、港澳人士、台湾同胞和海外侨胞的热烈欢迎。广东省自1984年下半年开考自学考试以来，已有170多万人报名参加自学考试。

为了更好地贯彻、落实《中华人民共和国高等教育法》，进一步倡导自学、鼓励自学、帮助自学、推动自学，使我省的自学考试事业"更上一层楼"，我们组织了各学科的专家、教授编写了具有广东特色又便于考生自学的自学考试教材和辅导书，以便考生更好地系统掌握学科知识，理论联系实际，提高运用知识解决实际问题的能力，早日成为国家的有用之才。

广东省自学考试委员会

2000年7月

本 书 前 言

《农业科技英语》是根据编著者多年来在普通高校和成人教育教学方面的经验，针对自学考试考生的实际情况，并结合科技英语的特点编著而成。

本教材内容主要包括了五大部分：课文、课文译文、综合练习、词汇表和考试大纲。课文涉及了农业生物、农业生产、环境保护、生态学和管理学等方面的内容。考虑到应考者的英语基础比较薄弱，且不一定较系统地学习过基础英语，或者有些考生虽然较系统地学习过，但也因长期少用而荒疏了，编著者在每篇课文的后面和在词汇表部分根据课文的释义列举和注释了一些重要的词汇或短语，重点语法现象及难句、长句，并给出了每篇课文的汉语译文，以便于应考者查阅、学习和理解。根据考试大纲的要求，为了让应考者进一步掌握基本语法知识、基本词汇和短语，提高通过阅读获取信息的能力，提高对文章的理解能力和实际运用语言的能力，提高对句子含义理解的正确程度和运用语法知识及词汇表达能力，本教材还设置了较大篇幅的综合练习。

在本教材编著中，我们参考和采用了有关教材和书籍的材料，在书后列出了参考书目，谨此致谢。如有遗漏，还请见谅。

由于水平有限，错谬之处，欢迎批评指正。

编著者

2002 年 9 月

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课文

Lesson 1

Trading Standards

1 Chickens slaughtered in the United States, claim officials in Brussels, are not fit to grace European tables. No, say the Americans: our fowls are fine, we simply clean them in a different way. These days, it is differences in national regulations, far more than tariffs, that put sand in the wheels of trade between rich countries. It is not just farmers who are complaining. An electric razor that meets the European Union's safety standards must be approved by American testers before it can be sold in the United States, and an American-made dialysis machine needs the EU's okay before it hits the market in Europe.

2 As it happens, a razor that is safe in Europe is unlikely to electrocute Americans. So, ask businesses on both sides of the Atlantic, why have two lots of tests where one would do? Politicians agree, in principle, so America and the EU have been trying to reach a deal which would eliminate the need to double-test many products. They hope to finish in time for a trade summit between America and the EU on May 28th. Although negotiators are optimistic, the details are complex enough that they may be hard-pressed to get a deal at all.

3 Why? One difficulty is to construct the agreements. The Americans would happily reach one accord on standards for medical devices and

then hammer out different pacts covering, say, electronic goods and drug manufacturing. The EU — following fine continental traditions — wants agreement on general principles, which could be applied to many types of products and perhaps extended to other countries.

From *The Economist* May 24th, 1997

New Words and Expressions

slaughter *vt*. 屠宰
fit *adj*. 适合的
grace *vt*. 给……增光
tariff *n*. 关税
standard *n*. 标准
dialysis *n*. 分离，分解；透析，渗析
electrocute *vt*. 使触电身亡
eliminate *vt*. 消灭
accord *n*. 协议
device *n*. 仪器，器械
hammer out 推敲
pact *n*. 合同；条约；公约

Notes to the Text

1. . . . , it is differences in national regulations. . . (Para. 1—3) 是各国管理条例上的差异，而不是关税阻碍了发达国家之间的贸易。这是一个 it 引导的强调句。
2. put sand in the wheels of (Para. 1—3) 阻碍，阻挠
3. So, ask businesses on both sides of the Atlantic, why have two lots of tests where one would do? (Para. 2—2) 这是一个没有引号的直接引语的例子。

Lesson 2

Five Scientific Breakthroughs of the 21st Century

1 It is predicted that there will be five scientific breakthroughs in the 21st century.

2 We'll know where we came from.

3 Why does the universe exist? To put it another way, why is there something instead of nothing? Since the 1920s, scientists have known the universe is expanding, which means it must have started at a definite time in the past. They even have developed theories that give a detailed picture of the evolution of the universe from the time it was a fraction of a second old to the present. Over the next couple of decades, these theories will be refined by data from extraordinary powerful new telescopes. We will have a better understanding of how matter behaves at the unfathomably high temperatures and pressures of the early universe.

4 We'll crack the genetic code and conquer cancer. In the 19th century operas, when the heroine coughs in Act 1, the audience knows she will die of tuberculosis in Act 3. But thanks to the 20th century antibiotics, the once dreaded, once incurable disease now can mean nothing more serious than taking some pills. As scientists learn more about the genetic code and the way cells work at the molecular level, many serious diseases — cancer, for example — will become less

threatening. Using manufactured "therapeutic" viruses, doctors will be able to replace cancer-causing damaged DNA with healthy genes, probably administered by a pill or an injection.

5 We'll live longer (120 years?). If the normal aging process is basically a furious, invisible contest in our cells — a contest between damage to our DNA and our cells' ability to repair that damage — then 21st-century strides in genetic medicine may let us control and even reverse the process. But before we push scientists to do more, consider: Do we really want to live in a world where no one grows old and few children are born because the planet can hold only so many people? Where would new ideas come from? What would we do with all that extra time?

6 We'll "manage" the earth. In the next millennium, we'll stop talking about the weather but will do something about it. We'll gradually learn how to predict the effects of human activities on the earth, its climate and its ecosystems. And with that knowledge will come an increasing willingness to use it to manage the workings of our planet.

7 We'll have a brain "road map". This is the real "final frontier" of the 21st century: The brain is the most complex system we know. It contains about 100 billion neurons (roughly the number of stars in the Milky Way), each connected to as many as 1,000 others. Early in the next century, we will use advanced forms of magnetic resonance imaging to produce detailed maps of the neurons in operation. We'll be able to say with certainty which ones are working when you read a word, when you say a word, when you think about a word, and so on.

New Words and Expressions

breakthrough *n*. 突破性进展；突破点
fraction *n*. 小部分；些微
telescope *n*. 望远镜
unfathomably *adv*. 不可理解地
crack *vt*. 破译；破解
genetic *adj*. 基因的
conquer *vt*. 攻克
tuberculosis *n*. 肺结核
antibiotic *n*. 抗生素，抗菌素
pill *n*. 药丸；片剂
molecular *adj*. 分子的
therapeutic *adj*. 治疗的
virus *n*. [微] 病毒
administer *vt*. 给予；投药
furious *adj*. 激烈的；猛烈的
ecosystem *n*. 生态系统
frontier *n*. 领域
neuron *n*. [解] 神经元
resonance *n*. 共振

Notes to the Text

1. ...which means it must have started... (Para. 3—3) which 表示的是主句的意思。
2. ...from the time it was a fraction of a second old to the present. (Para. 3—4)，应注意 from...to...的结构。
3. ...can mean nothing more serious than taking some pills... (Para.

4—3)，注意 more...than...结构。

4. If the normal aging process is basically a furious, invisible contest in our cells — a contest between damage to our DNA and our cells' ability to repair that damage — then 21st-century strides in genetic medicine may let us control and even reverse the process. (Para. 5—2) 此句可译为：如果说通常的衰老过程主要是我们细胞内的一场激烈但不可见的竞赛的话（一场对我们的脱氧核糖核酸进行破坏同我们体内的细胞对被破坏的组织进行修复的竞赛），那么 21 世纪遗传医学的巨大成就会使我们能够控制，甚至逆转这一过程。

5. And with that knowledge will come... (Para. 6—4) with that knowledge 是 come 的宾语，置于句首起强调作用。

Lesson 3

Robots Built to Make Farming Easier and More Productive

1 By the year 2000, a farmer should be able to buy his own agricultural robot for the price of a new pickup truck. Researchers at Purdue University in West Lafayette, Ind., and the Volcani Institute in Bet Dagan, Israel, have devised a robot that can cultivate crops such as lettuce, cabbage, pumpkins and melons. A single robot will be able to transplant, cultivate and harvest, says Gaines Miles, a Purdue agricultural engineer and one of the inventors of the prototype.

2 "The robots will probably look like tractor-pulled trailers with grippers," Mr. Miles explains, "but for the farmers with only a few acres of vegetables or fruits, they'll become as useful and versatile as a tractor."

3 The advent of intelligent machines capable of selective harvesting has the potential of raising the quality of fresh produce, lowering production costs, and reducing the drudgery of manual labor.

4 The prototype has been developed to pick melons or any other head crop, because of the importance of these crops in the United States.

5 Despite the advanced development in automation and electronic sensing, quality sorting of agricultural products is predominantly done by hand. Evaluating and sorting fruits is labor-intensive and not very reliable. For example, farmers currently determine the ripeness of a

melon with their eyes, based on what they know from experience. Human failure, fatigue, and inadequate experience cause inconsistency in selection. A significant amount of harvested fruit is immature or overripe. This reduces the quality of marketed fruit and results in large losses to the grower.

6 To assemble the agricultural robot, Miles and several graduate students began with what looks like the skeleton of a large utility trailer. The eyes of the robot are cameras mounted on the trailer frame which scan the plants below.

7 A fan blows across the plants to move their leaves and expose hidden fruit. A computer then analyzes the camera images and looks for round, bright spots that might be melons.

8 To help differentiate a melon from other round, flat objects, a sensor projects a laser beam onto the ground.

9 When the laser strikes a spherical object at the same time the camera records a bright spot, the computer determines its ripeness through another sensing device. The sensor measures the level of aromatic gases coming from the melon. The amount of gases is directly related to the fruit ripeness — the more gases, the riper the fruit.

10 Finally, the robot picks the ripe melons with its gripper arm. The gripper gently grabs a melon, lifts it, and cuts the vine.

11 "It could be outfitted to do even more," Miles says, "While the grippers are transporting a piece of fruit to the conveyor... they could weigh it and add a bar code that tells the weight, variety and harvest date."

12 Funding for the project comes from the Binational Agricultural Research and Development fund, a US and Israeli fund. The prototype costs around $ 75,000, but Miles says manufacturers will be able to

use lower-cost components in the future.

13 "Electronic components for an agricultural robot could cost less than $2,000 in the next decade," he says, "Robots will be priced comparable to pickup trucks — within the reach of farmers with small acreage."

From *The Christian Science Monitor* December 1st, 1993

New Words and Expressions

pickup truck 小吨位载货卡车
prototype *n*. 样机
produce *n*. 产品；尤指农产品
drudgery *n*. 苦工；单调乏味的工作
crop *n*. 作物
electronic sensing 电子传感技术
quality sorting 按质拣选
fatigue *n*. 疲倦；劳累
inconsistency *n*. 不一致；不一致的事物
immature *adj*. 未成熟的
assemble *vt*. 装配
skeleton *n*. 骨架
utility (attrib.) *n*. 利益；效用
aromatic *adj*. 有香气的
outfitted *adj*. 配上附具的
bar code 条码
differentiate *vt*. 区分
gripper arm (机器人的) 抓臂

Notes to the Text

1. Purdue University in West Lafayette, Ind. (Para. 1—2) 美国印第安州西拉菲特的普尔杜大学。
2. Volcani Institute in Bet Dagan, Israel (Para. 1—2) 以色列贝特达冈的瓦尔卡尼研究所。
3. potential of raising the quality of fresh produce, lowering production costs, and reducing... (Para. 3—1) 这一句子中，连续用了raising..., lowering..., reducing...三个现在分词短语作为potential of的宾语。
4. Binational Agricultural Research and Development fund, a US and Israeli fund. (Para. 12—1) 美国和以色列两国农业研究与开发联合基金。

Lesson 4

The Scope of Ecology

1 No living creature, plant or animal, can exist in complete isolation. If an animal, it is bound to depend upon other living creatures, ultimately plants, for its food supply; it must also depend upon the activities of plants for a continued oxygen supply for its respiration. Apart from these two basic relationships it may be affected, directly or indirectly, in countless different ways by other plants and animals around it: Other animals may prey on it or compete with it for the same food; plants may provide shelter, concealment or nesting materials, and so on. In like manner, the animal will produce its own effects on the surrounding plants and animals: Some it may eat or destroy, thus swaying the balance between competing species; for others it will provide food; by its burrowing or trampling activities, and through its contribution of manure it may influence the texture and fertility of the soil.

2 This dependence on other living things is not confined to animals. Though plants manufacture their own food by photosynthesis, they are dependent on animal respiration for at least a part of the carbon dioxide which they use as raw material. Supplies of mineral salt which they use to build up their substance can only be maintained through the activities of fungi and bacteria breaking down the organic matter left in the soil by other living creatures. Again, many plants are en-