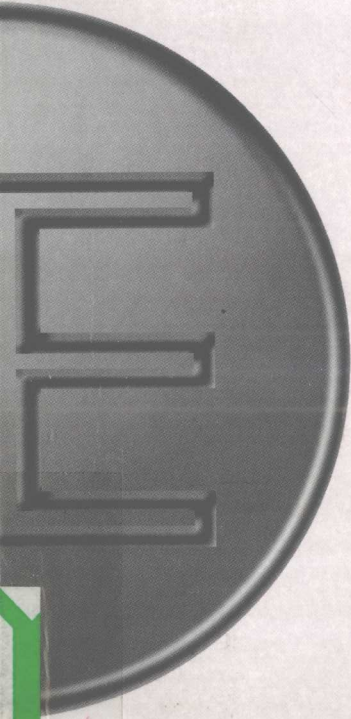


全国高等教育自学考试



英语科技文选自学辅导

组编 / 全国高等教育自学考试指导委员会
主编 / 李碧嘉



高等教育出版社

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英语专业

英语科技文选自学辅导

全国高等教育自学考试指导委员会 组编

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出版前言

为了完善高等教育自学考试教育形式,促进高等教育自学考试的发展,我们组织编写了全国高等教育自学考试自学辅导书。

自学辅导书以全国考委公布的课程自学考试大纲为依据,以全国统编自考教材为蓝本,旨在帮助自学者达到学习目标,顺利通过国家考试。

自学辅导书是高等教育自学考试教育媒体的重要组成部分,我们将根据专业的开考情况和考生的实际需要,陆续组织编写出版文字、音像等多种自学媒体,由此构成与大纲、教材相配套的、完整的自学媒体系统。

全国高等教育自学考试指导委员会

1999年10月

编者的话

《英语科技文选辅导》是一本供学习《英语科技文选》的读者使用的辅导用书。它是根据部分读者的意见和我们在使用该书的教学实践的基础上编写而成的。

本书的编写原则是：解释疑难、方便自学、辅导启发、加强练习和适当地扩充知识面。根据这些原则我们组织了以下几个方面颇为丰富的材料：

首先，在注释部分，我们对《英语科技文选》文章中的一些疑难点增补了注解，希望有助于读者对原文的正确理解；结合有些文章的突出特点，介绍了科技文体的一些写作技巧，使读者对科技文体有一定的认识；同时每篇文章还配有译文，作为学习者的参考。

第二，在词法和句法部分，我们除了对一些困难词汇给予解释，增加例句外，重点对同义词、近形词进行了对比说明，还归纳了更多的句型；词头、词尾的使用规律，以期能提高读者词汇的分辨和使用能力；加深其对英语句型和构词法的了解。

第三，针对《英语科技文选》中 Part A 的文章内容，我们添加了英文的课文内容和背景知识介绍材料，这有助于读者对原文的理解，进一步扩大知识面。

第四，每三个单元后有一个复习练习，书后还附有词汇复习 100 题。读者做完这些练习后可以巩固所学到的词汇知识。

第五，第 12 单元后附有一些指导如何撰写英语科技论文的材料，供有兴趣者参考。

第六，书后附有一套模拟试题，该题是基本按照全国高等教育自学考试指导委员会制定的《英语科技文选自学考试大纲》的要求拟定的。读者在学完《英语科技文选》和该书后，可用这套模拟题进行自测，评估学习情况，找出差距，以便进一步努力，争取获得自考的好成绩。

在本书编写过程中,北京理工大学李鹏飞教授参加了本书的编写工作,并对全部内容进行了仔细的审校,他对该书的编纂付出了很多心血,做出了很大的贡献;全国高等教育自学考试办公室的陈卫同志热情地支持了本书的出版。在此,对他们以及给本书提出过宝贵意见的老师和读者表示衷心的感谢。

编 者

1999年3月于北京

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UNIT ONE

Introduction to Part A

1. Persian Wars: The struggle (499-449 B. C.) between the Greeks and the Persian Empire. Following the revolt of the Greeks of Ionia (499-494 B. C.), Darius I invaded Greece and was defeated at Marathon (490 B. C.). Xerxes I continued the campaigns, was victorious at Thermopylae (480 B. C.) and took Athens. But the Persian fleet was destroyed at Salamis (480 B. C.) and the army defeated at Plataea (479 B. C.), driving the Persians from the Aegean.

2. Herodotus: (485-425 B. C.) Greek historian, known as the “Father of History”. His “Histories” deal with the wars between the Greeks and the Persians and the events leading up to them. The book is based on the material collected in Egypt, Asia Minor and Greece, and contains many geographical and topographical digressions as well as much that is fanciful.

3. Francis Bacon once told us, “Knowledge is power.” But it remains a problem what is knowledge and how we can obtain real knowledge.

In this text the author tells us human beings have always been trying to learn more things from the natural world and their own society. The chief purpose of man’s learning is to understand the laws of nature and then change nature by observing its laws.

Yet, most people tend to be somewhat overconfident of themselves. They tend to believe that if they work hard they will surely get things

they want. If they want to learn, they will gain knowledge on anything they wish to. They never know something in the world is unknowable. The reasons for this probably are: 1. The known is pressed on us from the very start; 2. Even when we are standing on the edge of the known, we may not realize it. Because we often take things for granted; 3. Just for the above two reasons, we would be born and grow up thinking we know more things than we actually do.

In spite of the above prejudice, it can be certain that with the time going on, many things now unknown will become known. It may be the result of the accumulation of our knowledge and experience. With the development of science and technology, it is possible to turn something unknowable into knowable. However, there may still exist things that will remain unknowable to us forever. This may be justified by the limitations of our predicting ability. True, science can help us to expand our knowledge by turning things natural into artificial. In other words, it can help us to make things uncontrollable controllable, or things unpredictable predictable. In spite of this, there may still be some artifacts of science and engineering that can grow so complex as not for us to predict at all. In addition, there will be lots of complex people with peculiar nature who tend to behave or think in some unpredictable ways.

Notes

Part A

1. (para. 2) ...beyond that book lies another book and that beyond the course lies another course.

(para. 5) Beyond the currently... inherently unknowable.

(para. 11) ...embedded within... humans.

以上都是倒装句。Example:

1) *Jumped down the burglar from the tenth floor when the policeman pointed his pistol at him.*

2) *On one of its legs is attached a small, stainless steel plaque.*

3) *Out rushed a missile from under the bomber.*

2. (para. 6) *Few unknowables... as such*: Such 指上文的 inherently unknowable。

as such 意为“像这样的人、事、物”，“以…资格、名誉、身份”，“因而”。

1) *We agree to the plan as such.* 我们同意象这样的计划。

2) *He is an old worker, and is respected as such.* 他是一位老工人，因而受到尊敬。

3. (para. 6) ... what they will do... sectors is claims of 的宾语。composed of many... sectors 是过去分词短语，修饰 economy。

4. (para. 2) *book full of things ... do not yet know*

(para. 10) *artificial surroundings ... replete with ... altered species*

(para. 11) *complexity reminiscent of natural objects*

上面斜体部分都是形容词短语作其前名词的后置定语。有些形容词和形容词短语常常后置，作名词的后置定语，如 important, necessary, available, present。Examples:

1) *There are no tickets available for Sunday's concert.*

2) *Is that why that hole deep in the ground is there?*

3) *There is not anything dissimilar in the behavior of the two gases.*

5. (para. 10) *It is in... that science excels.* 是强调句型。强调的部分是 in creating the artificial and controllable。

Part B

1. (para. 2) 注意 *it was they who had invented mechanical clocks in the first place!* 是强调句型。

2. 注意学习下列词头:

deci- 十分之一 centi- 百分之一 milli- 千分之一

decigram	分克	centigram	厘克	milligram	毫克
decimetre	分米	centimetre	厘米	millimeter	毫米
decilitre	分升	centilitre	厘升	millilitre	毫升

en/em-	置于…中,用…覆盖, 包住	astro-	与星、行星、宇宙有关
embed	埋置	astronomical	天体的,天文学的
encase	把…装箱	astronomy	天文学
enclose	用…围住	astronomer	天文学家
encompass	包含,包括	astrophysics	天体物理学

3. (para. 5) 英语里有许多 *in* + 名词 构成的词组。Examples:

in distress	in disguise	in wonder	in use
in despair	in triumph	in practice	in debt
in danger	in surprise	in progress	in haste
in disgrace	in honor	in preparation	in (good/bad) taste

4. (para. 9) 学会使用下列句型 *it is questionable whether...*

Example:

It is questionable whether this goal can be achieved.

Words and phrases

- 注意 *species* 单复数是同一形式。其他类似的名词还有 *means*, *series*, *aircraft*(航空器), *hovercraft*(气垫船), *sheep*, *fish*, *deer* 等。有的名词单复数有不同的形式,如 *phenomenon/phenomena*, *stratum/strata*(阶层), *crisis/crises*, *appendix/appendices*。
- anticipate/predict* 这两个词都可表示“预料”,但是 *anticipate* 还有“期待”的意思。
 - Are you anticipating/expecting a lot of people at the party tonight?*

2) *It's always better to anticipate/predict a problem before it arises than to search for a solution afterwards.*

3) *You should have anticipated/predicted that this would happen and tried to prevent it.*

3. delusion/illusion 这两个词都可表示“误会,误认,错觉”,但是 illusion 还有“幻想,迷惑”的意思。

1) *He is laboring under the delusion/illusion that his students enjoy his lessons.*

2) *He has grand illusions of changing the world.*

3) *The magician tricks the audience with skilful optical illusions, making things appear and disappear.*

4. amend/emend

amend: to improve 改进

He amended the speech by making some additions and deletions.

emend: to correct, rectify 改错

He emended the report by substituting the correct figures for the erroneous ones.

5. constrain/restrain

这两个词都可表示“控制,抑制,遏制”,constrain 还有“强制,强迫”的意思。

1) *Education, he often felt, had constrained/restrained his imagination.*

2) *You should try to constrain/restrain your ambitions and be more realistic.*

3) *I felt constrained to do what he told me.*

6. tumble vi., vt., n.

1) to fall or roll over suddenly, helplessly (使)摔倒;滚

They jumped out just before their car tumbled down the mountain-side.

2) to undergo a sharp, rapid descent in value or price 暴跌

Share prices tumbled yesterday.

3) to bring about the downfall of (使)倒塌,坍塌

At any moment the whole building could tumble down.

4) to put out of proper order, disorder 弄乱

He could just see her face and tumbled hair.

7. accessible a. that can be got to/into 可得到的;能进去的

The island is accessible only by boat.

access n. 进入;通路

1) *The only access to their house is along a narrow road.*

2) *Students need easy access to books.*

词组 have/gain access to

The tax inspector had complete access to the company files.

8. bearing n.

1) connection with or influence on sth. 关系;对...影响

Your remark didn't have any bearing on what happened.

2) manner of holding one's body; behaving 态度,举止,行为

She has a proud, distinguished bearing.

3) direction or angle as shown by a compass 方位;方向

The road system was so complicated that we had to stop to find our bearings several times.

9. fuse n. 保险丝;导火线;引信

You'll blow a fuse if you put the electric heater and the TV and all the lights on at the same time.

v.

1) (to cause) to melt in great heat 熔化

Lead will fuse at quite a low temperature.

2) to become joined by melting 熔合

a. *The aircraft came down in flames, and the heat fused most of the parts together into a solid mass.*

b. *He was able to fuse his men together into a fighting force.*

fusion n.

- 1) *The metal is formed by the fusion of two other types of metal.*
- 2) *His work is a fusion of several different styles of music.*

Additional Exercises

I. Give the spelling of the following words.

1. 不相关 a. i _____
2. 可得到的, 能进去的 a. a _____
3. 粉碎 v. s _____
4. 天文台 n. o _____
5. 确切的 a. d _____
6. 浮动 v. f _____
7. 十进制 a. d _____
8. 导航 n. n _____
9. 意志消沉的 a. d _____
10. 洞察 n. i _____

II. Fill in the following table as required.

词类	词形	词义	词形	词义
v.	Expand	扩大, 扩充, 张开	Expend	消费, 花费
n.	Expansion		Expense Expenditure	
a.	expansive expansible expansive		Expensive Expendable	

III. Write down the spelling of the required form.

1. probable n. _____
2. perceive a. _____
3. instinctive n. _____
4. inherently n. _____
5. predict a. _____
6. genetically n. _____

7. irregular n. _____ 8. accelerator v. _____

IV. Translate the following sentences into English, each using one of the words or phrases given in the box.

come to light	buoy up	capable of	account for	lose sight
of	add...to	sufficient to do	embark on	have a bearing
on	be obsessed with	be questionable	weathers	

1. 没有足以克服阻力的力,静止的物体绝不会运动。
2. 他继续研究能承受强大应力(stresses)的新材料。
3. 名单上还可以加上下列名字。(用倒装句)
4. 多数人的体温每天傍晚达到最高点可以用生物钟来解释。
5. 他们俩被染上艾滋病的恐惧困扰。
6. 最新显示的证据表明事实上他没有犯谋杀罪。
7. 我今天出去采购时,看见我以前的英语老师,但是不一会她消失在车流中。
8. 他被他的观众给他的热情接待所鼓舞。
9. 我们今年晚些时候要开始这一新的工程。
10. 你所说的与正在讨论的问题没有关系。
11. 他能否成为一个好总统令人怀疑。

V. Learn the following patterns which express **requirements and necessity**.

1. The house *needs* repairing.
requires to be repaired.
2. The house *must be* repaired.
3. It is *necessary for* the house to be repaired.
essential
4. Increased wages *makes necessary* an increase in prices.
necessitates
5. The use of plastic pipes *makes unnecessary* protection against corrosion.

does away with the need for

Complete the following statements, as shown above.

1. Increased speeds _____ improved cooling systems in the engines.
2. The crude ore _____ purifying before it can be of any industrial use.
3. Clear diagrams _____ the need for lengthy explanations.
4. To ensure freedom from distortion, it is necessary _____ the metal bar _____ cooled slowly.
5. The demand for low-cost power _____ engines of greater efficiency and with low fuel consumption.
6. With vehicles which will run on a cushion of air, the need for wheels can be _____.

VI. Fill in the blanks, each using one of the words in the box in its proper form.

program for itself once prefer decision without on initiative than symptom recommend chan- nel consult or

New scientific breakthroughs will allow machines to take 1 more tasks that the human brain has traditionally done.

Computers, which 2 only remembered data, will make more 3. Machines that tell doctors today what 4 the patients have may soon be 5 surgery. Others will design new buildings after questioning buyers about their 6. Increasingly, human thought processes and even values are being 7 into computers, according to Earl Joseph, president of a Minneapolis 8 firm. "Imagine machines which are smarter and more intelligent 9 humans and, with their embedded 10, can't wait to tell you about it," he says.

In everyday life, the future will mean talking directly to computers 11 pushing buttons, Just tell a toaster, stove 12 other kitchen

device what to do, and it will hear the message. The oven may even decide 13 how long to cook the roast. Tell the television, "I want to watch 14 12 at 8 p. m. , but store the show 15 next week, and the job will be done.

译 文

Part A

已知、未知与未可知之

人们拿已经知道的东西来教诲我们,但我们却极少知道我们还有不知道的东西,而且我们几乎全然不知道世上尚有不可知晓的东西。这种偏见导致我们对周围世界产生的种种错误的观念。

人们从我们的人生之初就把他们已知的事物灌输给我们。我们在学校里开始学习每一门课程的时候都从学习一本充斥着已知事物的长篇巨著开始,书中的那些已知之物,我们尚未曾知晓。我们晓得除了本书之外,还有另外的著作;除了这门课程之外,尚有另外的课程。知识的疆界与未知之物接壤,它看上去飘渺遥远,与我们何其相干,用一片看起来似乎一望无际的已知领域把我们与之隔断。我们实在不明白我们行进的知识之路是何其狭窄,只要稍许左顾右盼一下,就能一眼瞧到未知之物。

甚至当我们正在踏着未知事物的疆界时,我们可能还意识不到这种情形。那些在学校里攻读希波战争史的莘莘学子们何曾知道书中描绘得栩栩如生的诸番事件,无一不是根据幸存下来的唯一史料——人称“历史之父”的希洛多德所撰写的著作写成的。你若欲知当时发生在希腊且这些事件又未曾为希洛多德记载下来任何事件,那现在就不得而知了,很有可能你永远别想知道它。但我们却从未想到过希洛多德的记述是处在未知疆界上的零星知识而已,他的记载只不过是