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高职高专英语

科技英语

Scientific English

单胜江 主 编
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前　言

《高职高专英语（科技英语）》根据我国教育部最新颁布的《大学英语课程教学要求》编写，本书汇集了国外知名报纸、书刊中的科技英语资料。其中所有资料都经反复筛选，合理取舍。其正文部分共摘选 20 个对话或短文，涵盖了计算机科学、材料科学、航空航天、通信工程等专业，内容广博、题材广泛、专业面宽、语言规范。对了解当代科技发展，进一步增强对科技英语的爱好，提供了一个良的好的阅读平台。

全书共 20 个单元，每单元的主要内容包括：正文部分的对话或短文；后附有生词和专业技术词汇表；主要根据最新《大学英语课程教学要求》列出动词、形容词的英语释义和一到两个典型例句，其他术语等名词则一般直接给出汉语，以方便学生掌握、积累考级核心词汇和相关的思考题及语言操练部分，能更深入地帮助学生阅读和理解课文，学习、巩固重要词汇。每单元均有“科技英语构词法”相关的内容，旨在帮助学生有意识地利用构词法来理解、拓展科技英语词汇，提高其阅读科技文献的速度和准确性。考虑到相当一部分学习者还要参加大学英语等级考试来检测语言学习效果的需要，每单元的最后一部分还提供与课文题材接近的完形填空或短文阅读若干，难度以四级为主，为学习者等级

考试提供了部分题型的专项训练。

本书具有多项用途：既能巩固基础英语，又能拓宽专业视野；既有大学英语等级考试专项训练项目，又有科技英语构词法方面的内容；既注重快速查询相关专业知识信息的阅读能力培养，又能注重科技英语口头表达能力的提高，对有志成为既懂专业又熟练掌握英语的复合型人才学习者大有益处。

本书可供高等院校各专业英语学习提高阶段使用，对各专业科技工作者也有相当的参考价值，同时，还适用于所有的英语爱好者和学习者。

本书主编为单胜江，副主编为钟敬东，参加编写的人员包括王声良、徐珊珊。单胜江、钟敬东负责总体策划、编选各章节材料及审稿。第一章至第十章由徐珊珊负责编写，第十一章至第二十章及附录、构词法部分由王声良负责编写。

对书中所引用文献的提供者表示衷心的谢忱。希望本书的出版能得到各类科技英语学习者及爱好者的垂爱，不足之处，恳请指正。

编　者

2006 年 5 月

Contents

Unit One

Telecommunications

Giles Newton has been asked to prepare an article on telecommunications. To learn more about the subject, he and Susan visit two friends, Andrew Smith and Paul Huntley, who work in the laboratory of a company that develops and manufactures various types of communications systems.

Susan Newton: Andrew, how would you define 'telecommunication'?

Andrew Smith: The sending and receiving of information by electrical means.

Giles Newton: Well, that's simple enough.

Paul Huntley: Yes, but that is where simplicity ends, Giles. The modern telephone exchange, for example. We take it pretty much for granted, yet it automatically connects all stages of local and long-distance calls, and can handle several thousand conversations during precisely the same second of any time of any day.

Andrew: The interesting thing is that the more complete telephone services become, the more the demand for those services grows.

Paul: Yes, and it's those increased demands that lead to some of the problems we have to solve in improved methods of carrying messages or signals.

Andrew: Radio was used for long-distance telephone services as long ago as the 1920s for linking the continents across the oceans.

Paul: The radio telephone terminals were located outside the big cities and linked to them by lines.

Giles: I suppose in those early days signals had to be picked up, received, outside the cities, because in cities they have the problem of atmospherics, or what most people call 'static'.

Paul: Yes, well we get round that today by using H.F., that's High Frequency—any frequency from 3,000 to 30,000 kilocycles per second. And V.H.F., Very High Frequency; and U.H.F., that's Ultra High Frequency.

Andrew: And it's these higher frequencies that are, for all practical purposes, clear and static-free.

Susan: I see.

Paul: And just to keep the record straight, there's the S.H.F., the Super High Frequencies, ranging from three million to thirty million kilocycles per second. And it all adds up to a very tiny window in the electromagnetic spectrum.

Susan: Electromagnetic spectrum?

Paul: Yes, that includes radio waves and light waves, the whole range.

Andrew: And, of course, radio is used for ship-to-shore and ground-to-air communications, which can be telephonic, using its voice or telegraphic, using morse code or some other pulse systems.

Paul: Yes, and incidentally, the S.H.F. wasn't possible

until the early 1950s, and the development of two new values that could generate and amplify these exceedingly high frequencies.

Andrew: If you want to make a note of it, the generator valve is called the klystron, and this was followed by the travelling wave tube for amplification.

Giles: I see. Together they made possible the use of the Super High Frequencies.

Andrew: Right! And with S.H.F., we can transmit eighteen hundred messages—telephone conversations, for example—in a single radio channel simultaneously.

Susan: We're always hearing about microwaves. Where do they fit into this arrangement of frequencies?

Andrew: The microwave is transmitted on the S.H.F. However, I'd say its use is both a blessing and a curse.

Susan: Oh, come on, Andrew! You can't make a statement like that, and just leave it there!

Andrew: Well, first you must understand that microwaves behave similarly to visible light.

Giles: You mean they travel in straight lines?

Paul: More or less.

Susan: Is that a disadvantage?

Paul: Not when we're transmitting to satellites or spacecraft. But from point to point on this planet, we're limited by the curvature of the earth's surface.

Andrew: In other words, our transmission distance extends up to about twenty-five to thirty miles, depenthing on the light of the receiving point or relay-station.

Susan: So that's why the Post Office Tower in London has

to be as high as it is.

Andrew: Yes, the tower is six hundred and twenty feet above the streets of London—the tallest building in Britain.

Giles: What is the actual present capacity of the Tower?

Paul: It can send out one hundred and fifty thousand telephone calls simultaneously.

Andrew: Or it could reply one hundred television programmes all at once.

Paul: In fact, of course, the facilities are shared between telephone, television, teleprinter and other signals.

Andrew: But you still don't have the complete stoty.

Giles: You mean satellites? I'd like to hear about them.

Paul: Well, do you know what a stationary satellite is?

Giles: Yes, it's in orbit, and it's made to travel at such a speed that it remains in the same position relative to the earth.

Paul: Yes, and it can 'see' one-third of our planet.

Andrew: Therefore three of them can provide uninterrupted 24-hours-a-day global communications all round the world. The signal — telephone call, television programme or what-have-you—is beamed to a stationary satellite by microwave.

Giles: And relayed by it to a ground station.

Susan: So the volume of telecommunication traffic through a satellite depends on the number of ground stations it can reach, and its capacity. The newest satellites can carry a thousand telephone conversations and a colour TV programme simultaneously.

Giles: Susan! You've been reading again!

New Words and Expressions

telecommunication *n.*.电信；无线电通讯

He is studying telecommunication in the university. 他在大学学电信。

terminal

a.

1. 末端的；终点的 We got off at the terminal station. 我们在终点站下车。
2. 末期的；晚期的 He is suffering from terminal lung cancer. 他患晚期肺癌。
3. 按期的；学期的 The terminal examinations will be held in early May. 期终考试将在5月初举行。

n.

1. 末端；终点 Work has started on the construction of a container terminal. 集装箱码头的建设已经动工。
2. 终端机 The data will be fed into the computer terminal. 数据将被输入电脑终端。

static

a.

1. 静的；静态的 static characteristics 静态特征
2. 静止的；停滞的 Even with static population, consumption rose steeply. 即便人口保持稳定，消费也会大幅增加。

n. 静电

Too much static collected on a surface may be dangerous. 表面上太多静电可能会有危险的。

H.F. *abbr.* 高频
V.H.F. *abbr.* 甚高频; 特高频
U.H.F. *abbr.* 超高频
S.H.F. *abbr.* 超高频
electromagnetic spectrum 电磁波频谱
amplification *n.* 扩大
microwave *n.* 微波
Do you know the length of microwave? 你知道微波的波长吗?

Exercises

I. Comprehension

1. How did Andrew Smith define 'telecommunication'?
2. What was used for long-distance telephone services in the 1920s?
3. What problem did they have by using the old method for telecommunication?
4. What do people use now in telecommunication?
5. What made the use of the S.H.F. possible?
6. Why did Andrew say "its use is both a blessing and a curse"?
7. What is the actual present capacity of the Post Office Tower in London?
8. What is a stationary satellite?

II. Fill each of the spaces with a word from the list

amplifier; amplification; composite; extend; extensible; extent; multiply; multiplication; multiple; multiplicity

1. This ____ has a gain of about 10.
2. A single frequency band can accommodate a ____ of operating channels.
3. The range of the local relay station is being ____ from 10 to 15 km.
4. The ____ of the damage is being assessed.
5. The separate insulated wires are wound together to form a cable with a ____ corn.
6. The ____ of the signal must be achieved without distortion.
7. The component parts of the ____ signal have to be separated again.
8. The aerial normally has a length of 1.5 metres but is ____ to 2.5 metres.
9. The result of ____ 3 by 7 is 21.
10. The ____ of 3 by 7 yields 21.

III. Word-formation

A. Change the following words into nouns

compose; align; deflect; reflect; refract

B. –meter: 表示“计、表、仪、器”等意义

anemobarometer（风速气压计）; atmidometer（汽化计，蒸发表）; atmometrohygrometer（蒸发兼湿度计）; bathometer（测深计）; cymometer（波长计，频率计）; dromometer（速度计）; erimeter（衍射测微计，绕射测微计）; frigorimeter（低温计）; hydrotachymeter（水轮机测速仪）; ionometer（剂量计[基于X射线使空气电离，此一起测量X射线的剂量]）; konimeter（流速计，灵敏转速表）; lucimeter（光度计）; micropyrometer（显微测温计）; microplastometer（显微可塑性测定仪）; Nilometer（尼罗河水位计[小写字母开始的 nilometer 泛指任何水位

计]；oleometer（验油表，量油计，验油比重计）；olfactometer（嗅觉计）；oligochronometer（灵敏时间间隔测量仪）；pagometer（测霜仪）；passameter（外径精测仪）；piezometer（压力计，压强计）；qualimeter（抗 X 光[穿透]硬度计）；radio-micrometer（发射显微镜）；saccharimeter（硬度计，测硬器）；tachometer（视距仪）；ultramicrometer（超微计）；voltameter（电量机，流电计[有电气分解以测电量或电流强度的装置]）；weatherometer（老化试验仪[对试验物能提供加速气候条件，例如有强紫外光源和水喷淋]）；xylometer（木材比重计）；zymometer（发酵计，发酵检验器）

Preparation for CET

I. Cloze

The printed word is just about the most important way we have of communicating with one another. Look around you at the 1 in school, at the newspapers, at home, at the posters 2 walls and the stamps you 3 on envelopes before posting them. Consider too, the 4 of being able to understand the instructions 5 on packets of food and medicine 6 in shops.

In these 7 in many other ways, the printed word has become so important that it is 8 to imagine how life could go on without it. In everyday life there are hundreds of situations 9 which people need to communicate with one another, and the printed word is nearly 10 the best method of communication 11 large numbers of people are involved.

12 you may know, communication intended to reach a large

13 of people is called "mass communication". The main present-day 14 of mass communication using the printed word are newspapers, magazines and books.

The 15 known forms of modern mass communication which do not use the printed word 16 television and radio. Television or radio broadcasts, like newspapers, 17 also reach millions of people 18 a time.

Printing is so important nowadays that it is difficult to imagine how people could 19 without it. In fact, though, it was many centuries 20 man even had a language. Early cave men communicated with one another by sign language or by drawing on the walls of their caves.

1.	A) libraries	B) desks	C) classrooms	D) books
2.	A) on	B) in	C) over	D) for
3.	A) store	B) stick	C) stuff	D) stain
4.	A) instance	B) importance	C) indifference	D) prominence
5.	A) stuck	B) rested	C) drawn	D) printed
6.	A) sell	B) sold	C) selling	D) sale
7.	A) but	B) and	C) or	D) if
8.	A) easy	B) difficult	C) fair	D) possible
9.	A) of	B) by	C) from	D) in
10.	A) meantime	B) seldom	C) sometimes	D) always
11.	A) which	B) where	C) that	D) lest
12.	A) Although	B) As	C) Because	D) Yet
13.	A) sum	B) amount	C) number	D) figure
14.	A) cases	B) letters	C) words	D) forms
15.	A) best	B) less	C) worst	D) more
16.	A) is	B) are	C) means	D) mean
17.	A) must	B) should	C) may	D) need

18. A) for	B) at	C) on	D) by
19. A) win	B) inform	C) manage	D) see
20. A) when	B) after	C) while	D) before

II. Reading Comprehension

A new kind of radar has been developed for space-age travelers. A working laboratory model of a new system of radar that makes use of a beam of light is said to be ten thousand times more accurate than the best comparable system of radar that uses microwaves. The model has shown that this radar system (known as laser-Doppler radar) can measure with absolute precision speeds varying from spaceship orbital injection velocities (对接速度) of five miles per second down to virtual stops-speeds of less than one ten-thousandth of an inch per second. According to the scientists who are developing this system, such fine measures of velocity are of prime importance in space missions. In a rendezvous between two spaceships, or in a landing approach by a vehicle onto an orbiting space station, a bump could rip open a ship's skin, or a slight push could knock the station out of its orbit. The light-beam radar, which operates at a frequency of trillions of cycles per second, could easily detect and measure the movement of a vehicle edging up to a satellite space station even at a small fraction of an inch per second. A country system using so precise a signal as this would allow a huge vehicle to dock at a space station as lightly as a feather.

1. Laser-Doppler radar makes use of _____.
   A) microwaves B) light
   C) sound waves D) both A and B
2. This radar system is significant because it _____.
   A) is the first radar system to work in space