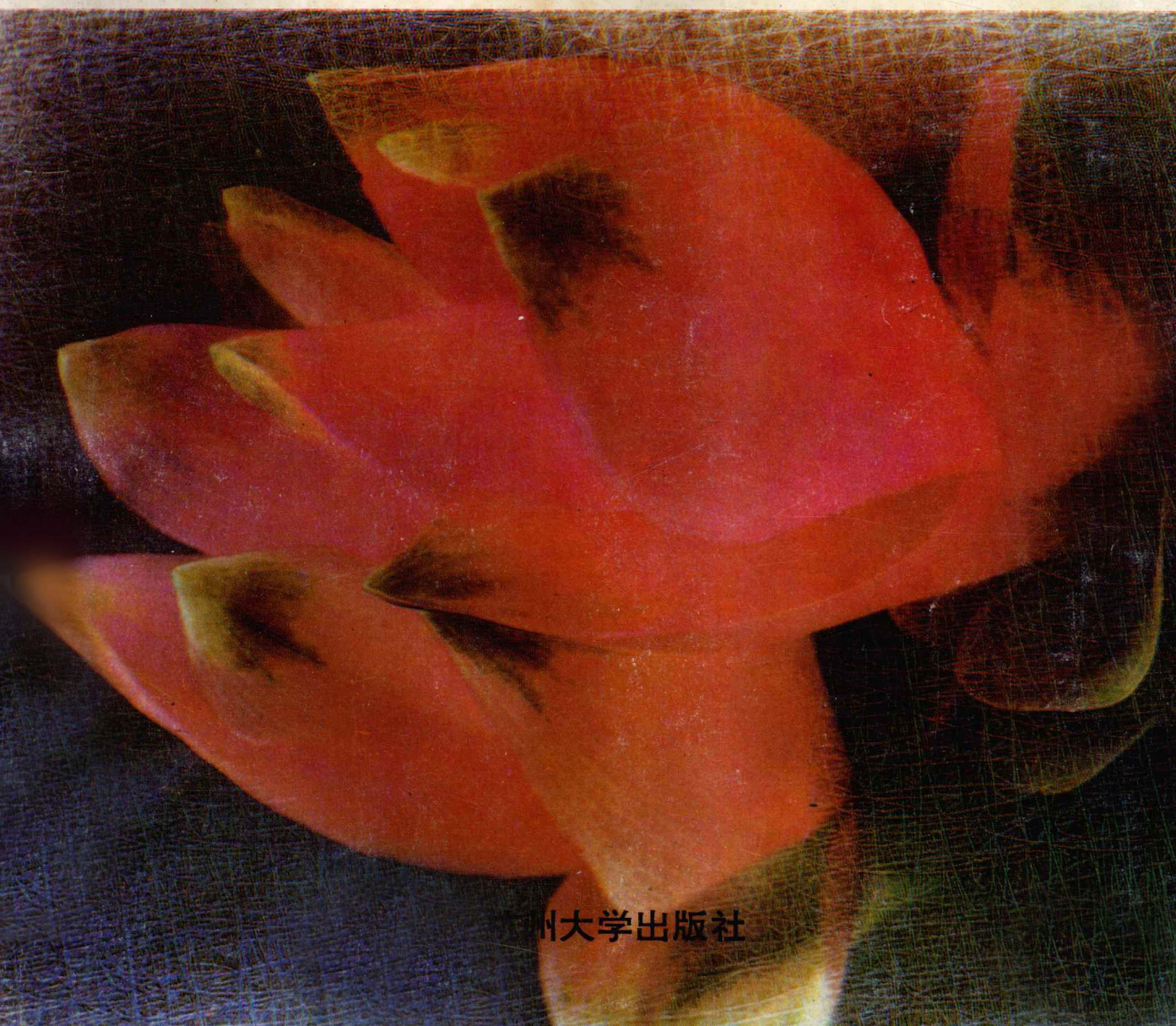
浙江省专业技术职务外语考试统编教材

ZHEJIANGSHENGZHUANYEJISHUZHIWU
WAIYUKAOSHITONGBIANJIAOCAI

理科英语

浙江省人事厅
浙江省职称改革领导小组办公室 组编



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序　言

当前，我国的改革开放和现代化建设事业进入了一个新的发展阶段。随着党的十四届三中全会的召开，社会主义市场经济体制将在我国全面建立并逐步得到完善。在这一关键时期，政府人事部门的各项工作，必须始终坚持党的基本路线，紧紧围绕经济建设这个中心，努力为改革开放服务，为经济建设服务，为广大干部和专业技术人员服务。按照社会主义市场经济体制的要求，进一步深化职称改革，是人事工作搞好“三个服务”的主要方面。

根据专业技术职务评聘工作对外语水平的要求，省职改领导小组决定，从1994年起，对专业技术人员晋升中、高级职务实行全省统一的外语考试。这样做，一方面可以更好地鼓励专业技术人员认真学习和熟练掌握外语，提高素质，以便更好地消化和吸收国外先进的科学技术和管理经验，促进我省经济建设的发展；另一方面，也有利于在全省范围内对各类专业技术人员进行客观、公正、统一的社会评价，有利于专业技术人员在社会主义市场经济条件下平等竞争，合理流动。

为使专业技术人员在准备外语考试时有所依据，浙江省人事厅和浙江省职称改革领导小组办公室组织有关方面的专家、教授、学者，编写了这套《浙江省专业技术职务外语考试统编教材》，并由杭州大学出版社正式出版。我衷心地希望，这套统编教材对提高全省专业技术人员的外语整体水平能有所帮助。

一九九三年十月十八日

前　言

《浙江省专业技术职务外语考试统编教材》是根据省职改领导小组浙职改字［1993］3号文件的规定，为适应全省统一组织的专业技术人员晋升中、高级职务外语考试命题出卷和个人学习准备的需要，由省人事厅和职改办组织编写的。它对于帮助广大专业技术人员学习、掌握外语知识，提高全省专业技术队伍的整体外语水平，更好地在专业技术职务评聘工作中严格掌握外语条件，适应社会主义市场经济体制和改革开放的需要，具有积极意义。

《浙江省专业技术职务外语考试统编教材》共十一册，包括基础英语一册（各专业通用）和文科英语、理科英语、工科英语、农科英语、医科英语、财经英语等六个专业英语各一册；日语、法语、德语、俄语四个语种，一个语种为一册。教材由考试大纲、基础语法、阅读课文及参考译文、考试样题及答案和词汇表五个部分组成。教材的编写根据考试大纲规定的测试知识范围和水平，分为E、D、C、B、A五个等级。每位申请晋升中、高级专业技术职务的专业技术人员，可根据自己所掌握的语种和从事的专业选择相应的教材，依据规定的外语考试适用等级进行复习和应试。

选派专家、学者参加教材编写的有杭州大学、浙江大学、浙江农业大学、浙江医科大学、浙江财经学院等院校。本套教材的出版，得到了省有关部门和市、地人事局及职改办的大力支持。在教材付梓之际，一并表示感谢。

由于编写时间仓促，教材中不妥之处在所难免，敬请广大读者和人事、职改部门的同志及时指正，以便再版时加以修订，使之更臻完善。

浙江省专业技术职务
外语考试统编教材编写委员会
1993年10月

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Lesson One

What Is a "Score"?

We are all so used to the decimal system that we often feel it is the only natural way of counting——by tens. But in the older days of Europe, there were other ways of doing it. For instance, the old Franks liked to count by twenties. Whenever they passed twenty they made a mark, or a score. That is why we still call twenty a "score". So "three score years and ten"are three twenties plus ten, or seventy. The French today say "four twenties" instead of "eighty", and "four twenties ten" for "ninety".

But twenty is too big to be convenient,[1] and ten is much better. In fact, our decimal system remains inconvenient. For twelve would be the best unit to use, and a duodecimal system——counting by twelves——would be a great improvement on the decimal one. The reason is that ten can be divided only by two numbers, two and five, while twelve can be divided by four——two, three, four, and six. So we could count better if we went by twelves instead of tens[2].

The mathematicians have known this for a long time, but what chance is there of getting people to change? It would be ten times harder than it was to get them to take over the Arabic numerals[3]. And yet we all use the system a little bit. Commercial stocks are counted by the dozen or by the gross——which is twelve dozen[4].

When people have once learned how to count, they soon need to do a little more. They need to add and subtract, multiply and divide, and do still other things with their numbers. So arithmetic is born, and we are not surprised to know that it is a very old science. Of course people did a good deal with arithmetic before any book was ever written about it. A book of arithmetic was written in Greece by the famous mathematician Euclid, about twenty-three hundred years ago, and another by the great astronomer Claudius Ptolemy in the second century after Christ. By then people could do very hard problems in arithmetic. They had also gone a good deal farther than arithmetic. All of mathematics is based on simple counting, but as man advances, he finds out a great many different kinds of things to count and a great many different ways of counting them. For instance, he learns to count all kinds of angles, triangles, squares, cubes, and other figures——because he has to know these things if he is going to survey his land, to build pyramids, and to do many other things. And as soon as he

beg ns counting and measuring such things, he is beginning geometry.

About 2,000 years before Christ the Sumerians in Mesopotamia were studying geometry. The old Egyptians knew a good deal about it ,too. It is often said that they had to do so; for the Nile overflowed every year to wash out all their boundaries. In order to mark the boundaries off again they had to know something about angles and other figures. We know that the great Euclid in Greece learned a lot from the Egyptians, and with what he added became the most famous man of all time in geometry. He wrote down nearly all there is to know about the subject;[5] and to this day the boys and girls in England who are studying geometry say they are beginning "Euclid".

New Words and Expressions

decimal	a. 十进位的
Frank	n. 法国人
score	n. 刻度,二十
plus	prep. 加
convenient	a. 方便的
duodecimal	a. 十二进位的
divide	v. 除,分
mathematician	n. 数学家
take over	接受
Arabic	a. 阿拉伯的
numeral	n. 数字
dozen	n. 一打(十二)
commercial	a. 商业上的
stock	n. 货品
gross	n. 一罗(十二打)
subtract	v. 减
multiply	v. 乘
arithmetic	n. 算术
Greece	n. 希腊
astronomer	n. 天文学家,星学家
after Christ	公元后
advance	v. 进展
triangle	n. 三角形
square	n. 正方形
cube	n. 立方体
survey	n. 测量,勘查
Pyramid	n. 金字塔
geometry	n. 几何学
Mesopotamia	n. 美索不达米亚(伊拉克)
Egyptian	n. 埃及人
overflow	v. 溢出,泛滥
boundary	n. 边界,地界
mark off	划分出,区分
Euclid	n. 欧几里德

Notes

1. But twenty is too big to be convenient,
   too…to 太(过分)…而不(能)
2. instead of tens 代替十

3. It would be ten times harder than it was to get…
句首 It 指前一句提到要人们转变成使用十二进位制之事；而 than 后面的 it 是不定式 to get…的形式主语。
4. which is twelve dozen.
which 引导的定语从句，修饰 the gross
5. He wrote down nearly all there is to know about the subject,
there is to know…是省略关系代词 that 的定语从句，修饰 all。

Comprehension of the Text

1. Which of the following statements is True?
A. The decimal system has been the only way of counting.
B. The decimal system is the best way of counting because people are used to it.
C. The author thought that a duodecimal system would be a great improvement on the decimal one.
D. A duodecimal system is the only way of counting.
2. In the passage, "score" stands for ____.
A. 20 B. 10 C. 12 D. 15
3. According to the passage, which way of counting is the best one?
A. By ten. B. By twenty. C. By twelve. D. None of them.
4. People began to learn arithmetic ____.
A. from the book written by Euclid 2,300 years ago
B. from the book written by Claudius Ptolemy in the 2nd century
C. from both books of Euclid and Claudius Ptolemy
D. from their own life before Euclid wrote his book of arithmetic
5. The Sumerians and Egyptians began geometry ____.
A. nearly 4,000 years ago
B. almost 3,000 years ago
C. about 2,000 years ago
D. over 1,000 years ago
6. Euclid became the most famous man in geometry, because ____.
A. he learned geometry from the Egyptians
B. he wrote the first book of arithmetic
C. he wrote down neally all the knowledge about geometry
D. he was popular with the boys and girls in England

Lesson Two

Obeying the Law of Gravity

It is well-known that Sir Isaac Newton established the theories of motion. He studied horizontal and vertical motion. Here we are going to introduce his studies of vertical motion.

Newton was looking for an explanation of what holds the moon in its orbit. One day, while he was sitting in his garden, he noticed an apple fall from a tree[1]. He began to think about how the force of gravity extends to the tops of trees, even to the tops of mountains. If it extends that far, perhaps it extends all the way to the moon.[2]

Newton had already proved that an object always moves in a straight line if no outside force acts on it. The moon does not move in a straight line, but revolves around the earth. Newton concluded that the gravitational force of the earth holds the moon in its orbit around the earth. This same gravitational pull holds the sun and the planets in their places.

Newton determined that weight is the gravitational force which acts on an object. If you travel to the moon, the mass of your body will be the same, but your weight will be less. This is due to the proportionally smaller size of the moon. Similarly, if you travelled to different planets, your weight would vary with the mass of each planet in our solar system[3].

Newton was able to calculate the relative weights of the sun, the earth, and the planets by comparing their relative gravitational strength. The greater the mass of two bodies, the greater is the force of attraction between them. Thus, the force of attraction between the earth and a 200-pound person is greater than the force of attraction between the earth and a 100-pound person.

Gravitational force depends not only on the masses of the two bodies, but also on the distance between them. Astronauts experience weightlessness on the way to the moon, because they are not close enough to be affected[4] by the gravitational pull of the earth or the moon.

Newton extended his law even further. He said that every object in the universe exerts a gravitational pull on every other object. This means that you are exerting a force on the person sitting next to you, and your desk is exerting a force on your pencil, etc. If you ask why we don't feel this force, the answer is that gravity is only a strong force when a huge body, such as the earth, is involved.

Newton also explained the tides of the ocean. For thousands of years, it was noticed that there was a relation between the ocean's tides and the phases of the moon, but no one was able to explain it. Newton explained that just as the earth pulls on the moon, the moon pulls on the earth. The gravitational pull of the moon has little effect on our land masses, but it pulls on the oceans which are free to move[5]. Thus, the law of gravity applies everywhere in the universe. The concept of universal gravity was the greatest contribution of Isaac Newton.

New Words and Expressions

law	n. 定律,规律	mass	n. 块,质量
gravity	n. 引力	solar	a. 太阳的
establish	v. 确立,建立	solar system	太阳系
theory	n. 理论	calculate	v. 计算
motion	n. 运动	relative	a. 相对的,相应的
horizontal	a. 水平的,地平的	attraction	n. 吸引,引力
vertical	a. 垂直的	distance	n. 距离
orbit	n. 运行轨道	astronaut	n. 宇航员
extend	v. 延伸,延长	weightlessness	n. 失重
object	n. 物体	affect	v. 影响
act on	对…产生作用	exert	v. 发挥,产生
revolve	v. 旋转	involve	v. 牵涉,使卷入
gravitational	a. 引力的	tide	n. 潮汐
pull	n. 拉力,牵引力	phase	n. 周相,(月的)盈亏
due to	由于	effect	n. 效果,影响
proportionally	ad. 成比例地	apply	v. 应用
similarly	ad. 同样地	universe	n. 宇宙
planet	n. 行星	concept	n. 概念
vary	v. 变化		

Notes

1. he noticed an apple fall from a tree.
   在 apple 和 fall 中间省略了不定式的 to。一部分动词,如 see, hear, notice, have, make, let 等后面的不定式省略 to,直接跟动词原形。
2. If it extends that far, perhaps it extends all the way to the moon.
   that far:那么远　　that 在此作副词,修饰 far

all the way 远道，一直到

3. if you travelled to different planets, your weight would vary with the mass of each planet in our solar system.
   此句用的是虚拟语气。if 从句中用 travelled 这一过去时态代替 travel，表示与现实不符，主句用 would vary 代替 will vary，表示对可能发生的事的猜测。
4. they are not close enough to be affected 太远以致不会受到影响
5. the oceans which are free to move: the oceans which move freely

Comprehension of the Text

1. Newton found an answer to his question of gravity ____.
   A. quite accidentally
   B. by sitting in his garden everyday
   C. by thinking about how gravity extends to the tops of trees and mountains
   D. by observing how apples fall to the ground
2. If the gravitational force of the earth did not hold the moon in orbit, according to Newton, the moon would ____.
   A. fall down to the earth　　B. be attracted by another moon
   C. move in a straight line　　D. revolve around the earth
3. According to Newton's theory of gravity, your mass would ____ on Mars.
   A. be smaller　B. be greater　C. disappear　D. be the same
4. Since greater masses have greater attraction, the force of attraction between the sun and the earth is ____ that between the earth and the moon.
   A. less than　　B. stronger than
   C. the same as　　D. incomparable to
5. We do not feel the pull of another person sitting beside us. This is because ____.
   A. people do not exert gravitational pull like objects
   B. your own gravity is as strong as that of the other person
   C. this pull is too light to be felt
   D. a strong force such as the earth is necessary for such a pull
6. Newton explained that the ocean's tides are caused by ____.
   A. eclipses(蚀)　　B. earth's gravity
   C. their free movement　　D. the moon

Lesson Three

The Wonder of Water

It is difficult to overestimate the importance of water in our lives.[1] All living matter, including rocks, food, and minerals, contains water. There is water underground and in the atmosphere. Areas of the world with an adequate supply of water provide for fertile lands[2] in contrast to desert areas where people cannot live.

Nearly three-fourths of the earth's surface[3] is one big ocean. The continents are the large islands in the ocean. Most of the earth's life exists in the ocean. The ocean also contains enormous quantities of nearly every element, including uranium, magnesium, silver and gold. Despite its importance, until recent years, little was known about the ocean. Today we know, for example, that the land surface of the ocean has extremely high mountains and deep valleys. The island of Hawaii is the top of a mountain that is 33, 000 feet high—— higher than any mountain in the Himalayas. And there are underwater canyons that are much larger than the Grand Canyon in the United States.

Water is a colorless, odorless, tasteless liquid that is transparent. The green or blue color of the sea is found only in deep water. Any taste in the water is usually due to the presence of minerals which are dissolved in the water.

Water is the most versatile substance. It is often called the universal solvent because many substances dissolve in water: sugar, gases, salt, and many minerals. Scientists believe that the salt in the ocean water comes from the erosion of rocks.

The climate on earth is unique among all the planets in our solar system. It allows water to exist in all three states: solid, liquid and gas. Water is one of the few materials which expands when it freezes. For example, if you freeze a closed bottle filled with water, the bottle will break. Since ice takes up more space than water[4], it is less dense and floats on the tops of the oceans.

Another unique characteristic of water is that it heats and cools more slowly than most other materials, especially other liquids. It takes more heat to boil water or melt ice than most substances require. These properties of water exert a powerful moderating effect on our climate. Water moderates the temperature all year round. Areas near the ocean are generally warmer in winter and cooler in summer than inland areas.

Water is remarkable in another way. [5]If we could follow a drop of water, we might find that it travels around the world. As the sun warms the ocean, some of the water evaporates into the air. As the air rises to cooler parts of the atmosphere, it condenses

and forms clouds. Some of the water falls as snow or rain on the mountains. In the spring, the snow melts and the water runs downhill through streams and rivers. Most of the water returns to the oceans via the ground, waterfalls, streams, rivers, etc. This never-ending circulation of water from the oceans to the air to the land and back to the oceans is called the water cycle.

New Words and Expressions

overestimate	v. 过高估计	erosion	n. 腐蚀，侵蚀
mineral	n. 矿物，无机物	unique	a. 独一无二的，独特的
atmosphere	n. 大气，空气		
adequate	a. 足够的，充分的	expand	v. 膨胀，扩张
fertile	a. 肥沃的	freeze (froze, frozen)	v. 结冰
continent	n. 陆地，大陆		
enormous	a. 巨大的，庞大的	dense	a. 密集的，稠密的
quantity	n. 数量	float	v. 飘浮
uranium	n. 铀	characteristic	n. 特性，特征
magnesium	n. 镁	melt	v. 融化
valley	n. 山谷	property	n. 性能，特征
canyon	n. 峡谷	moderating	a. 缓和的，减轻的
odorless	a. 无气味的	remarkable	a. 异常的，值得注意的
liquid	n. 液体		
transparent	a. 透明的	evaporate	v. 蒸发
presence	n. 存在，出席	condense	v. 冷凝，凝结
dissolve	v. 溶解	downhill	ad. 下坡
versatile	a. 万用的，通用的	via	prep. 经，由
substance	n. 物质	circulation	n. 循环，环流
solvent	n. 溶剂	cycle	n. 周期，循环
solid	n. 固体		

Notes

1. It is difficult to overestimate the importance of water in our daily lives: No matter how much more you estimate the importance of water, you will never overestimate it，意为：无论你对水的重要性有多高的评价，也决不会过分。
2. provide for fertile lands
   provide for：养活，为…做准备

3. three-fourths of the earth's surface 地球表面的四分之三
英语中分数的表达方法是:分子在前,用基数词,分母在后,用序数词。如果分子是二或二以上的数字,分母后应加 s。

4. Since ice takes up more space than water
既然冰比水占据了更多的空间
take up: 占据

5. Water is remarkable in another way.
从另一方面来看,水也是很特别的。

Comprehension of the Text

1. We have fertile lands and desert areas all because of ____.
   A. water
   B. the atmosphere
   C. the oceans
   D. an adequate supply of water

2. In the ocean we find ____.
   A. many kinds of minerals
   B. most of the earth's life
   C. deep valleys and high mountains
   D. all of the above

3. Which of the following is not a characteristic of water?
   A. It is colorless, odorless and tasteless.
   B. It is a universal solvent.
   C. It occupies less space when it freezes.
   D. Sometimes it tastes salty because there is mineral in it.

4. How is the climate on earth different from that of other planets in the solar system?
   A. It is hot in summer and cold in winter.
   B. Three-fourths of the earth is a big ocean.
   C. There is salt in sea water.
   D. Water exists as a solid, liquid or gas.

5. What is the natural color of water?
   A. Green. B. White. C. Blue. D. None of the above.

6. The phrase "water cycle" means ____.
   A. to make water clean
   B. to make water play an important role
   C. the process of water evaporation and return to the ocean as rain or snow
   D. that water runs to the ocean from rivers