

中国专业技术职务评聘英语考试教材  
理科分册

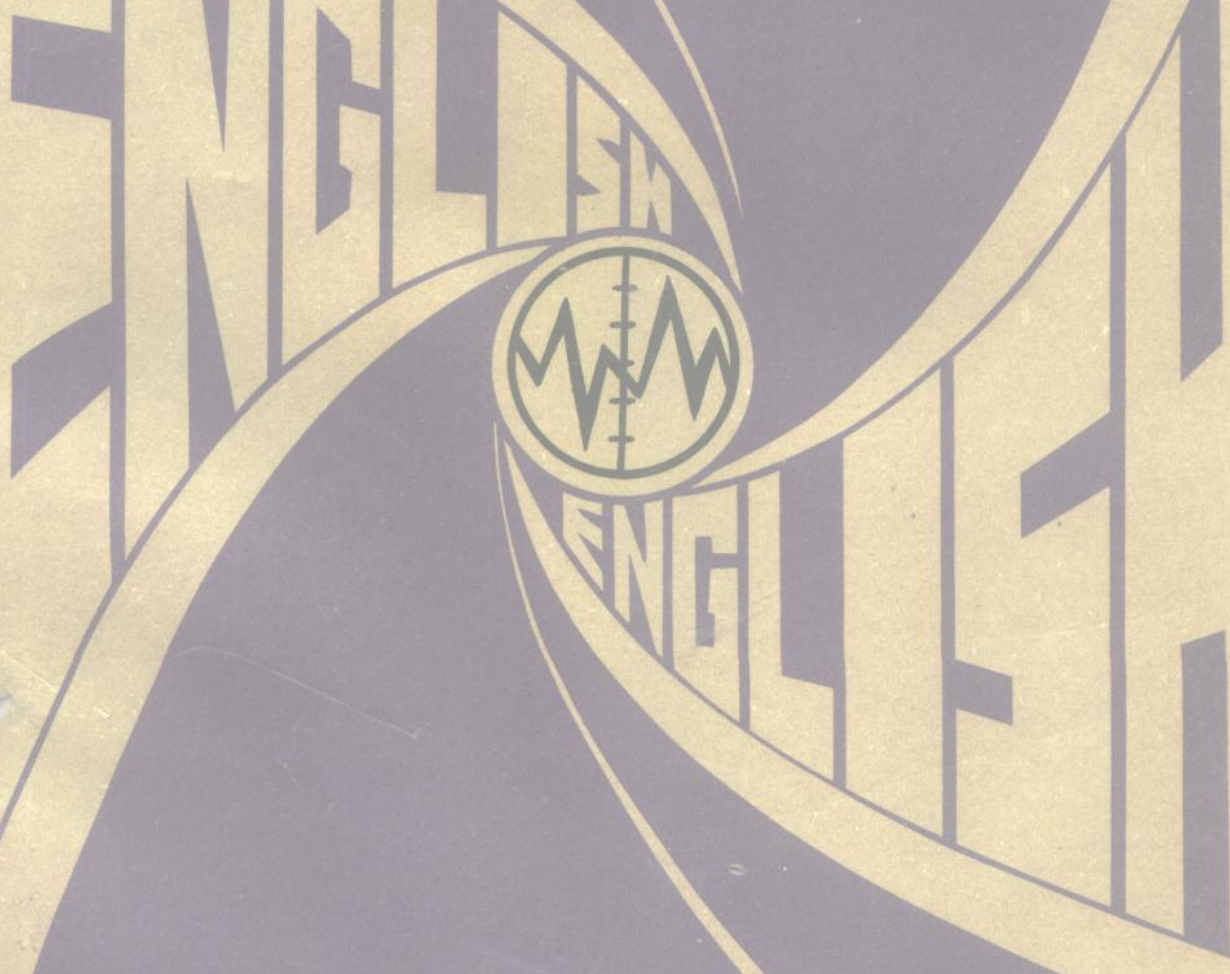


中国专业技术职务评聘英语考试教材

# 理科分册

(上)

主编 刘世同



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# 《中国专业技术职务评聘英语考试教材》

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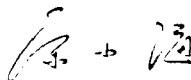


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# 序 言

国家人事部  
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随着我国改革开放的顺利推进和社会主义市场经济的不断发展,各项建设事业对人才资源的需求日益增强。在这种新形势下,人事工作应在邓小平同志有中国特色社会主义基本理论指导下,贯彻党的基本路线,按照十四届三中全会确定的市场经济基本框架,着眼于改革开放、经济发展、民族和谐和社会稳定,更好地为经济建设服务,为用人单位服务,为各类人员服务。

根据这一工作方针,如何按照社会经济发展的要求,客观公正评价人才的知识水平和工作能力已成为深化职称改革的重要任务。其中,外语作为专业技术人员学习、借鉴国外先进科学技术和经验的一种工具,是职称工作中人才评价的一项重要内容。在这方面,除了建立符合我国实际的有关政策规定以外,还必须有一套科学的评价办法。为此,一些省市和部门对职称外语考试进行了有益的探索。但由于各方面的原因,目前在考试的内容、标准和方法上仍然存在一些缺陷和不足,特别是缺乏符合专业技术职务评聘工作需要,科学、规范的考试教材。在这种情况下,我很高兴看到由黄凤山主编,中国人事出版社出版的《中国专业技术职务评聘外语考试教材》一书。

虽然由于我不是外语考评方面的专家,很难对这本书的内容、水平、以及适用程度作准确的评价。但从职称考试工作的角度看,这无疑是件好事。基于这一点,我应邀写了上面几句话,以表示对本书出版的祝贺与对有关人员辛勤工作的敬意。同时,以此作为本书的序言。

借此机会,希望社会各方面,特别是有关专家、学者和广大专业技术人员更多地关心、支持职称考试工作,以建立客观、公正的人才评价制度,为我国社会主义建设事业评价和造就大批合格人才。我也希望这套教材,对推进和完善我国专业技术职务评聘外语考试制度,能起到积极的作用。

一九九四年四月于北京

# 前 言

人事部人职发〔1991〕4号文件《关于在专业技术职务评聘工作中严格掌握外语条件的通知》颁布已经三年了,各地在专业技术职务评聘工作中对外语条件考试、考核的要求,都作了一些有益的探索,这对促进我国专业技术职务评聘外语考试制度的建立,都有积极的意义。但这一工作还不够规范,也不平衡,大部分地区和部门,尚无较实用的考试教材,根据这种情况,为了更好地贯彻执行国家人事部人职发〔1991〕4号文件精神,我们组织编写出版了《中国专业技术职务评聘外语考试教材》。这套教材,共包括英语、日语、俄语三个语种,其中英语考试教材共分六册,包括《文科分册》(含政法)、《理科分册》(含信息管理)、《工科分册》(含工程)、《财经分册》、《农学分册》和《医学分册》。为了使用方便,每一分册又分上、下两册。上册为外文课文100篇(初级30篇、中级30篇、高级40篇)、单词和注释;下册为语法、参考译文及考试样题。教材根据《通知》中“对外语条件既要严格要求,又要实事求是,区别对待”的精神,各地区、各部门对参加专业技术职务评聘的长期坚持在基层、野外或海上从事地质、水利、森林、渔业捕捞等和处在同一系列专业技术职务的老年专业技术人员,应区别对待,可以降低等级参加考试。教材在这方面作了充分考虑,每一等级系列,均由易到难,以便为各种情况下的专业技术人员使用本教材提供方便。

这套教材的编写,得到国家有关部门的大力支持,中央教育和出版的有关部门对书稿进行了认真的审定,人事部全国人事考试中心副主任、人事部全国职称考试指导中心副主任宋小海同志曾对编写工作给予关怀指导并亲自为教材作序,向全国推荐使用。

这套外语考试教材的出版,对于提高我国专业技术人员的外语水平,对促进和完善我国专业技术职务评聘外语考试制度的建立,具有积极的意义。各地区、各部门职改办(考试中心),如果本地区、本部门尚无完备的统一外语考试教材,我们希望能使用这套教材,通过实践,不断使教材质量得到提高,让我们共同携手,积极稳妥地推进我国专业技术职务评聘外语考试工作顺利进行。

这套教材由黄凤山主编,各分册主编,均是国内外语教学界有影响的学者、教授,但因教材资料新、时间紧,不妥甚或错误在所难免,恳请专家、学者以及使用本教材的广大专业技术人员批评指正,以便再版修改。

中国专业技术职务  
评聘外语考试教材编委会

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# Lesson 1

## Metal

It is not easy to define what a metal is<sup>①</sup>. Physically, a metal is a substance that has a bright luster and is a good conductor of heat and electricity<sup>②</sup>. Metals have varying degrees of hardness, density, malleability, and ductility. (Malleability concerns being able to be rolled out and hammered<sup>③</sup>. Ductility has to do with being drawn out, as into wire<sup>④</sup>.)

Metal has a definite melting point and will fuse with other metals to form "alloys". With the exception of mercury,<sup>⑤</sup> all metals are solids at ordinary temperatures.

Some metals are found in the pure state, but most of them are found in combination with other elements.

### New Words and Expressions

define <i>v.</i>	给……下定义	hammer <i>v.</i>	锤打
metal <i>n.</i>	金属	draw out	拉长
physically <i>ad.</i>	从物理学角度	wire <i>n.</i>	电线, 金属线, 金属丝
substance <i>n.</i>	物质	definite <i>a.</i>	明确的, 确切的
luster <i>n.</i>	光泽, 光彩	melting <i>a.</i>	熔解的
conductor <i>n.</i>	导体	fuse <i>v.</i>	熔合
heat <i>n.</i>	热	alloy <i>n.</i>	合金
electricity <i>n.</i>	电	exception <i>n.</i>	除外
vary <i>v.</i>	变化, 不同	mercury <i>n.</i>	汞
degree <i>n.</i>	程度	solid <i>n.</i>	固体
hardness <i>n.</i>	硬度	ordinary <i>a.</i>	普通的, 一般的
density <i>v.</i>	密度	temperature <i>n.</i>	温度
malleability <i>n.</i>	韧性	pure <i>a.</i>	纯的
ductility <i>n.</i>	延展性	combination <i>n.</i>	结合
concern <i>v.</i>	指, 关于	element <i>n.</i>	因素, 元素
roll out <i>v.</i>	铺开, 辗开		

### Notes

①It is not easy to define what a metal is.  
给金属下定义并非是件容易的事。

句中 it 是先行词,作形式主语,不定式短语 to define what a metal is 是真正的主语,当不定式做主语时常用这种结构。例如:

It is a hard job to prevent the air from being polluted.

防止空气污染是件困难的事。

It only took us a year to complete the project.

完成这项工程只花了我们一年的时间。

② Physically, a metal is a substance that has a bright luster and is a good conductor of heat and electricity.

从物理学角度来说,金属是一种具有光泽和良好导热导电性能的物质。

句中关系代词 that 引导了一个定语从句,that 指 substance,并且在从句中作主语。

③ Malleability concerns being able to be rolled out and hammered.

韧性是指能被压辗平直和锤打的性能。

句中 being able to... 是动名词,作 concerns 的宾语。

④ Ductility has to do with being drawn out, as into wire.

延展性是指能被拉长的性能,比如被拉成线。

being drawn out 是动名词短语,作介词 with 的宾语。

句中 has (have) to do with sth., 意思为“与……有关”。例如:

He has to do with electronics.

他是搞电子学的。

I don't know what it has to do with you.

我不明白这关你什么事。

⑤ With the exception of mercury, ...

除了汞以外,.....

with the exception of 为介词词组,意为“除……之外”,在句中作状语。如果表示相反的意思,可以用 without any exception。例如:

She likes all her studies with the exception of chemistry.

除了化学之外,她喜欢所有的课程。

All the citizens should keep the law without any exception.

所有公民都应遵纪守法,无人例外。

## Lesson 2

### The Prediction of the World Population

The United States Census Bureau says the population of the world is growing at its slowest rate in twenty years<sup>①</sup>. But it notes that the population still is expected to increase<sup>②</sup> by more than 25% in the next 13 years. That would add up to a total of about 6,

200,000,000 persons.

The Census Bureau says birthrates have dropped recently in every area of the world except<sup>①</sup>. Africa. It also says the populations of developing nations<sup>②</sup> are growing faster than the populations of industrial nations.<sup>③</sup> Seventy-five percent of the world's people now live in developing nations. China is expected to remain the world's most populous country in the near future and India is expected to remain number two<sup>④</sup>. But by the year 2035, Nigeria probably will replace the Soviet Union as the third most populous country in the world. Mexico City will become the world's largest city area instead of<sup>⑤</sup>. Tokyo and Yokohama, Japan.

### New Words and Expressions

the United States 美国  
census *n.* 人口调查, 人口普查  
bureau *n.* 局  
population *n.* 人口  
rate *n.* 率  
note *v.* 表明, 特别提到  
increase *v.* 增加, 增长  
add up to 合计达, 增至  
total *n.* 总数  
birthrate *n.* 出生率  
drop *v.* 落下, 下降  
except *prep.* 除……之外  
Africa *n.* 非洲  
industrial *n.* 工业的  
nation *n.* 民族, 国家  
percent *n.* 百分比

remain *v.* 保留, 保持, 维持  
populous *a.* 人口众多的  
India *n.* 印度  
Nigeria *n.* 尼日利亚  
(非洲西部一国家)  
probably *ad.* 大概, 可能  
replace *v.* 取代, 替代  
the Soviet Union 苏联  
Mexico City 墨西哥市(墨西哥首都)  
instead of 取代, 代替  
Tokyo 东京(日本首都)  
Yokohama 横滨(日本港市)  
Japan *n.* 日本  
the United States Census Bureau  
美国人口普查局

### Notes

①...the population of the world is growing at its slowest rate in twenty years...世界人口目前正以 20 年来最为缓慢的速度增长。

rate 常与介词 at 搭配, 如表示“以……的速度、速率、价格等”可用介词词组 at the rate of...。例如:

The train was going at the rate of 80 kilometres an hour.  
火车正以每小时 80 公里的速度行驶。

These products are sold at the rate of two thousand yuan a ton.  
这些产品以每吨 2000 元的价格出售。

介词 at 常常用来表示运动的速度、货价或服务费用。例如：

The car raced through the countryside at sixty miles an hour.

汽车以每小时 60 英里的速度急驰乡间。

Eggs are sold at three shillings a dozen.

鸡蛋以每打 3 先令的价格出售。

②...the population still is expected to increase...

be expected to 后接动词不定式,意为“预计”、“估计”或“可望”。例如：

These mines are expected to go into production next year.

这些矿预计明年可以投产使用。

Industrial production is expected to increase 6 percent this year.

工业产量今年可望增长 6%。

③That would add up to a total of about 6,200,000 persons.

总数将达约 620 万。

a total of 总数,合计。例如：

The expenses reached an enormous total of \$ 50,000.

支出总额高达 5 万美元。

The hotel has a total of 2,000 rooms.

这家旅馆有 2000 间客房。

add up to...合起来是……,合起来说明……。例如：

All this adds up to a new concept of the universe.

所有这些形成了对宇宙的一个新概念。

The figures add up to 270.

这些数字加起来是 270。

④except... 除……之外,不包括……在内。例如：

Everyone except Smith answered the question correctly.

除史密斯外,这个问题大家都回答对了。

He has lost everything, except his good name.

他除了没有失去好名声以外,一切都失去了。

except 的后面也可以跟不定式。例如：

Nothing remains for us to do, except to enjoy the fruits of our labours.

我们除了欢享自己的劳动果实外,再没有别的事可干了。

当前半句里的动词有助动词时,except 后面的动词不定式通常省略 to。例如：

The children found there was nothing they could do with their money, except spend it on sweets.

孩子们发现他们的钱除了用来买糖果外,没有其它的用途。

⑤developing nations 发展中国家。

developing 是现在分词,作定语,修饰 nations。

⑥industrial nations 工业发达国家,表示这一意思,还可以用 developed 代替 industrial。

⑦China is expected to remain the world's most populous country in the near future and India is expected to remain number two.

预计在不久的将来,中国仍将是人口最多的国家,印度仍将位居第二。

在这句中不定式短语 to remain the world's..., to remain number two 分别作主语 China 和 India 的补足语。

⑧instead of ...代替,取代。例如:

Smith went to the meeting instead of the manager.

史密斯代替经理去参加了会议。

We watched TV instead of going to a film.

我们没去看电影,而是看了电视。

## Lesson 3

### The World's First Compass

That the world's first compass was invented by the Chinese people is a well-known historical fact<sup>①</sup>.

Many centuries ago, the people of China made the discovery that natural magnets have attracting properties and that a freely suspended magnetized bar always points north and south<sup>②</sup>. Thus they found that such an instrument could be used for the purpose of determining direction.

It was recorded in ancient books that the earliest compass was shaped like a spoon and mounted on a graduated plate<sup>③</sup>. About the end of the eleventh century the Chinese people used the compass in navigation. In the twelfth century a compass of the floating—needle type came into use<sup>④</sup>. It was recorded that this early sea—going compass was in use on Chinese ships<sup>⑤</sup> up to the seventeenth century<sup>⑥</sup>.

From the Chinese the Arabs learned to make compasses and to use them in navigation. The Arabs in turn introduced the compass to Europe<sup>⑦</sup>. In the hands of the Chinese, Arabs and Europeans, the great invention of the ancient Chinese was further developed. That is how the compass finally reached its present perfection<sup>⑧</sup>.

### New Words and Expressions

compass *n.* 指南针

invent *v.* 发明

well-known *a.* 著名的,众所周知的

historical *a.* 历史的

century *n.* 世纪

discovery *n.* 发现

natural *a.* 自然的

magnet *n.* 磁石

property *n.* 特性  
suspend *v.* 悬,吊  
magnetize *v.* 磁化  
bar *n.* 铁棒  
point *v.* 指向  
thus *ad.* 因此  
instrument *n.* 仪器  
purpose *n.* 目的  
determine *v.* 决定,测定  
direction *n.* 方向  
shape *v.* 形状

spoon *n.* 勺  
mount *v.* 安放  
graduated *a.* 刻度的,分度的  
plate *n.* 盘子  
navigation *n.* 航海  
floating-needle *a.* 浮针型的  
sea-going *a.* 航海  
Arab *n.* 阿拉伯人  
Europe *n.* 欧洲  
further *ad.* 更进一步地  
perfection *n.* 完美,十全十美

## Notes

① That the world's first compass was invented by the Chinese people is a well-known historical fact.

世界上第一个指南针是中国人发明的,这是众所周知的历史事实。  
这里 that 引导的是主语从句,句子的谓语是系动词 is。

② ...the people of China made the discovery that natural magnets have attracting properties and that a freely suspended magnetized bar always points north and south.

中国人发现天然磁石有吸引特性,而且发现,一根自由悬挂的磁棒总是指向南北。  
此句中的两个 that 所引导的从句均为同位语从句,都说明 discovery。

③ It was recorded in ancient books that the earliest compass was shaped like a spoon and mounted on a graduated plate.

据古书记载,最早的指南针设计得像只勺,安放在有刻度的盘子上。

句型 it + 动词的被动语态 + that 从句中, it 为形式主语,而真正主语则是 that 从句,常用的动词有 record, report, say 等。例如:

It has been discovered that the animals also have their own languages.

人们发现动物也有它们自己的语言。

It is reported that a new type of computer has been produced by this factory.

据报导一种新式的计算机已由这家工厂制造出来。

④ ...come into use 开始使用。例如:

When did steam come into use?

什么时候开始使用蒸气的?

Electric power has come into wide use in the rural areas.

农村已广泛使用电力。

⑤ on Chinese ships...,

在中国船只上.....,

在表示船上、飞机上、火车上、汽车上等要用介词 on。例如：

on the train 在火车上；

on the plane 在飞机上；

on the bus 在汽车上。

⑥ up to the seventeenth century.

直到 17 世纪……。

up to 直到……。例如：

On Fridays the shops keep open up to 6 p. m.

每个星期五商店一直营业到下午 6 点。

Up to the end of last week 3,000 pounds has been subscribed to the fund.

到上周末，为基金捐款已达 3000 英镑。

⑦ introduce...to... 将……介绍给……，引进，采用。例如：

porcelain-manufacture was introduced into Japan from China in the 16th century.

磁器制造是在 16 世纪由中国传入日本的。

Many new designs have been introduced.

采用了许多新设计。

Please introduce me to your friends.

请将我介绍给你的朋友。

⑧ That is how the compass finally reached its present perfection.

这就是指南针是如何最后达到它今日的完美程度的。

句中 that 指整个前句所提到的内容。how 引导的从句作表语。reach 意为“达到”。例如：

Many items have reached advanced world levels in quality and performance.

许多产品在质量和性能上达到了世界先进水平。

Average grain output per mu has reached 650kg.

平均亩产量达到了 650 千克。

## Lesson 4

### The Cause of Earthquakes

In the 17th century, French mathematician and philosopher, Rene Descartes, proposed an idea to explain the cause of earthquakes<sup>①</sup>. Descartes said earthquakes were caused by gas exploding far below the surface of the earth. Scientists generally accepted this theory until late in the last century. That is when they discovered that most earthquakes were linked to movements along cracks in the earth's crust<sup>②</sup>.

However, a report by four researchers has caused scientists to take another look at<sup>③</sup> the Descartes' idea. The researchers studied an earthquake that took place off the island of



Torishima, near Okinawa on June 13, 1984<sup>④</sup>. The earthquake was not a major one; it measured only 5.5 on the Richter scale. But it caused a huge ocean wave, or tsunami. The wave measured one and one half meters high, even after travelling more than 160 kilometers<sup>⑤</sup>. The researchers said melted rock leaked up from the center of the earth. When the hot rock mixed with the wet sand on the ocean floor, it created enough steam to cause a violent explosion. The explosion caused the Torishima earthquake and tsunami.

Scientists have known about the dangers of suddenly mixing melted rock and cold water for some time<sup>⑥</sup>. In the early 1970s, for example, officials on an island off Iceland faced the same problem. Lava from a volcano was moving toward a village. The village would be buried if the flow was not stopped. The officials decided to blow up some solid rocks to create a new path to the sea. Scientists warned, however, that if the lava mixed suddenly with cold sea water, a great amount of steam would be produced under great pressure. The steam could explode and destroy the island. The scientists said many tons of hot melted rock could produce an explosion equal to<sup>⑦</sup> that of a hydrogen bomb. The Icelandic officials had to change their plan.

Scientists still do not know what causes all earthquakes. Movements along cracks in the earth's crust appear to cause some earthquakes. But Descartes' idea about lava exploding beneath the surface of the earth could explain others. The only thing scientists are sure about is what does not cause earthquakes<sup>⑧</sup>. They have rejected the colorful stories which helped explain the earthquakes to ancient peoples. Scientists do not believe, for example, that earthquakes are caused by a huge elephant under India, a giant catfish under Japan, or a turtle under America.

### New Words and Expressions

French *a.* 法国的  
 mathematician *n.* 数学家  
 philosopher *n.* 哲学家  
 link *v.* 与……有关, 结合, 联结  
 crack *n.* 裂缝  
 take place 发生  
 major *a.* 主要的  
 Richter 里斯特(美国人, 他首先提出了对地震的测量方法。)  
 on the Richter scale 里氏震级  
 tsunami *n.* 海啸  
 leak *v.* 漏出  
 violent *a.* 激烈的, 剧烈的  
 explosion *n.* 爆炸

lava *n.* 熔岩  
 volcano *n.* 火山  
 flow *n.* 流  
 blow up 爆炸  
 pressure *n.* 压力  
 explode *v.* 爆炸  
 hydrogen bomb 氢弹  
 reject *v.* 拒绝  
 elephant *n.* 大象  
 catfish *n.* 鲇鱼  
 turtle *n.* 海龟  
 equal *a.* 相当于, 等同于  
 Okinawa *a.* 冲绳群岛(日本地名)  
 Torishima *a.* 鸟岛(日本地名)这里