中国专业技术职务评聘英语考试教材

农学分册

（上）

主编 陈士平 魏 相

中国人事出版社

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《农学分册》

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序 言

国家人事部
全国职称考试 指导中心副主任 [illegible]

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管理经验的一种工具，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着一些缺陷和不足，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

目　录

初 级 部 分

中 级 部 分

高 级 部 分

Lesson 1

Soil

During his entire existence upon the earth man has depended upon the soil, either directly or indirectly[1]. The soil is the only source for the production of the materials used by us for food and clothing.

The growth and development of all cultivated plants is greatly dependent on the fertility of the soil.

Grain, fruits and vegetables are food products obtained by man directly from the soil. Domestic animals consume grain and forage produced by the soil and in their turn[2] supply us with meat, milk, eggs and other products used for human food. They supply us with wool and silk for the manufacture of clothing as well[3].

Soil vary in a number of characteristics. Some soils are rich in all kinds of food required by plants, some are rich in certain elements but deficient in[4] others.

All agricultural soils contain some organic matter mixed in different proportions with the mineral matter.

Fragments of all kinds of minerals and rocks as well as[5] the remains of all the plants and animals may be found in the soil and make a home for[6] plant development. Plants grow in soil which has a dark colour. This dark soil is humus.

To make a normal growth, the plants require favourable soil and climate conditions. These are a continuous supply of water, plant food, heat, light and air.

In our management of the soil we may do much to[7] regulate the supply of water and organic matter. One of our most important tasks is the proper management and preservation of the soil.

When the soil is dry, the wind blows it away. Some of the humus is lost; and if this continues the land will soon look like a desert. The farmer ought to prevent this. He can grow trees near his fields. These will stop the force of the wind, and then it cannot blow the humus away.

Sometimes after heavy rain, the water carries the humus down to a river. This often happens if the field is on the side of a hill. The water rushes down the hill and the river carries the humus away to the sea. The farmer cannot make any more humus quickly, but he can prevent this if he makes his fields level. He can make the side of the hill like the stairs of a big house. Then the water will not rush down to the river, and the humus will stay in its place.

It takes hundreds of years to make humus, and we ought to save every bit of it. We need more food. About 200 babies are born every minute. Of course, some people die, but every day there are 120, 000 more people than there were on the day before. There are more than 5, 000 million people in the world now. At the end of the century there will be about 7, 000 million. Where will the other 2, 000 million grow their food?

New Words

existence *n* 生存,存在
fertility *n* 肥力
domestic *a* 家养的
manufacture *n* 制造
characteristic *n* 特征,性状
deficient *a* 缺乏的,不足的
fragment *n* 碎屑
remain *n* 遗骸,残骸
humus *n* 腐殖质
management *n* 管理
regulate *vt* 调节
preservation *n* 保持,保护
rush *vi* 冲,猛进
stair *n* 阶梯

Notes to the Text

(1)either……, or……:或……,或……。either directly or indirectly:或直接或间接,不是直接就是间接。
(2)in their turn:轮到它们,然后,反过来。
(3)as well:也。
(4)rich in……:富含……。deficient in……:缺乏……。
(5)as well as:以及,和。
(6)make a home for……:为……提供一个栖息的场所。
(7)may do much to……:在……方面大有可为,在……方面可以做很多贡献。

Lesson 2

Soil Structure

The study of agriculture should begin with the soil. Soil is formed partly by the breaking up of rocks.

Heat makes rocks, like other things, expand, and cold makes them contract. They expand and contract in summer and winter, on hot days and cold days[1]; so they are often broken. Bits fall off. Sometimes, too, rain-water runs into a space in a bit of rock. Then on a cold day, the water freezes. When water freezes, it expands. (This is a strange fact, but it is a fact). The ice takes up more space than the water, and this may also break the rock.

The roots of trees sometimes grow into the space in rocks, and as they grow they press the rock apart, like the ice. This pressure breaks the rock too.

The breaking up of rocks forms inorganic materials. They lie on the ground, or under it, and they form soil of a kind[2], but it is very bad soil.

Soil also contains organic material. This is created by the rotting of plant and animal material, with the help of water, wind, air, temperature changes, and tiny soil organisms.

We come now to the structure of the soil itself and the results of the different soil-forming

process. The structure of a soil is seen in its profile, in the layers of differing colors, textures, and depths. A typical profile might be found in a high bank along a stream or in a deep roadway cut. These strata are called horizons, and a mature soil normally has A, B, and C horizons.

The A horizon is the covering layer. It may also be called the surface soil, topsoil, or plow layer. It takes a very long time for topsoil to form[3]. Most smaller plants grow with their roots in the A horizon. The A horizon may be carried away by erosion.

The B horizon is the next layer down. This is the subsoil in which the roots of large plants usually grow. The subsoil contains fewer nutrients, so tillage does not normally reach the B horizon. In mature soil the A and B horizons are called the solum. The solum is formed from parent rock and organic matter.

Beneath the solum we have the C horizon. In mature soils the C horizon is the basic or parent material form which the solum has usually been formed. The C horizon normally lies on the bedrock and plant roots do not always reach the C horizon.

This mass of raw, weathered rock and soil-forming material on the earth's surface is called regolith. It includes all the loose materials above the lower, solid surface, sometimes called the bedrock. Only the upper part of the regolith has been changed enough by soil-building processes to be considered soil[4].

However, there are some exceptions in the structure of profiles. An example is the regosol, a group of soils without horizons, which have developed from deep loose rock or from soft rocky deposits. Another example is the D layer, which lies beneath the soil profile and is unlike the parent material from which the strata in the profile have been formed.

When we speak of an ABC soil, we mean a mature soil or one having three well-defined horizons. An AC soil is usually young or immature. The A layer contains organic matter, of which the C layer may have little or none.

(From *Special English: Agriculture*)

New Words

break *v* 分裂,破碎,断裂
expand *vi* 膨胀
contract *vi* 收缩
bit *n* 小片,小块
freeze *vi* 结冻,结冰
strange *a* 奇怪的
apart *ad* 分离,离开
profile *n* 剖面
texture *n* 质地
stratum *n* 〔复 strata〕层次
horizon *n* 层
topsoil *n* 表土
erosion *n* 侵蚀
subsoil *n* 心土
solum *n* 风化层
beneath *prep* 在……下面
bedrock *n* 岩床
weather *vi* 风化
regolith *n* 土体
regosol *n* 岩成土
deposit *n* 沉积物
well-defined *a* 轮廓分明的

Notes to the Text

(1)They expand and contract in summer and winter, on hot days and cold days = They expand in summer and on hot days and contract in winter and on cold days.

(2)……of a kind:与……一类的,类似……的。

(3)it 是形式主语,代表后面的动词不定式 to form。for 后面的名词 topsoil 是 to form 的行为主体。

(4)only …… to be considered soil:只有……才能被认为是土壤。

Lesson 3

Soil Chemicals

There are at least sixteen elements which are considered important to the growth of green plants. The first three are carbon, hydrogen and oxygen. Plants obtain carbon from the air by photosynthesis. This is combined with hydrogen and oxygen, which are obtained from water.

Then, nitrogen and potassium. And then there are calcium, phosphorus, and iron. The others are sulfur, magnesium, manganese, zinc, copper, molybdenum, boron, and chlorine. Some are more important than others. One division is based on the relative amounts of these elements found in plants rather than on[1] their importance to plant growth. The elements that are found in the largest quantities in plants are called the macronutrients. Those found in lesser amounts are the micronutrients. The macronutrients nitrogen, phosphorus, potassium, sulfur, calcium, and magnesium are found in the soil.

There are numerous other elements in the soil, but we are not sure they're necessary to normal plant growth. Moreover, some of them in large amounts, are known to be toxic.

Oxygen comes from the air, and also from water, where it is combined with hydrogen. Carbon is found in both air and water, too. In water it is usually combined with oxygen as carbon dioxide. There is also carbon dioxide in the air.

Nitrogen is necessary for cell division, growth, and respiration. Also, nitrogen must be present with chlorophyll for photosynthesis to take place[2]. Photosynthesis is the process by which plants make sugar from air and water in the presence of light and chlorophyll. Nitrogen is found chiefly in the growing tips, buds, and young leaves. As maturity approaches, most of the nitrogen moves from the other plant parts into the seed, and thus life is carried on.

Phosphorus, like nitrogen, is found in the growing parts of the plant, the flower and the seed. It, too, is needed in the process of photosynthesis. It is especially important in inheritance.

Potassium must be present if plants are to form sugars and starches. It also makes it possible for these nutrients to move[3] from one part of the plant to another.

These processes occur in the following order. First, you have plant and animal material which rots and breaks down chemically. It combines with water in a carbonic acid solution. This solution then combines with the inorganic elements, and finally you get the nutrients in the forms in which they are usable by plants. The organic material is simplified during this process, so that nitrogen is released in the form of ammonia and then changed into nitrates. But the rotting of plant and animal material really provides the power which changes the elements from the rock material into plant food.

Sulfur is important in chlorophyll formation and is also important in several other ways, especially since it can move from one plant part to another. It is present in proteins and in hormones.

Chlorosis is usually caused by a lack of iron or magnesium. Too little iron may cause dieback, too. Magnesium is also necessary in chlorophyll formation. In fact, chlorophyll tissues contain more magnesium than any other part of the plant. Both iron and magnesium are needed in photosynthesis.

Plants need calcium. It is the basic element in the material that holds plant cells together. If there isn't enough lime in the soil, the roots and other parts of the plant don't grow in their normal shapes. A lack of zinc has much the same effect.

Without boron the starches and sugars don't pass from cell to cell. The tip buds die, and the plant develops in an unhealthy way. When there is too little chlorine, chlorosis develops. The plant dries out, loses color, and dies.

Sodium is usually a harmful element. Even in small amounts it's toxic to many plants. But some root crops need a little sodium, and other plants can use it to some extent in place of[4] potassium.

Copper and molybdenum are important in the action of soil micro-organism on nitrogen. We're not sure what effect silicon and aluminum have on plant growth. And I might add that the cobalt, fluorine, and iodine found in plants are necessary to the health of animals. However, the selenium found in some plant is highly toxic to animals.

(From *Special English: Agriculture*)

New Words

photosynthesis *n* 光合作用
potassium *n* 钾
phosphorus *n* 磷
magnesium *n* 镁
manganese *n* 锰
macronutrient *n* 常量营养素,大量营养素
micronutrient *n* 微量营养素,微量元素
respiration *n* 呼吸
division *n* 分类,分裂
numerous *a* 很多的,为数众多的
toxic *a* 有毒的

chlorophyll *n* 叶绿素
maturity *n* 成熟
approach *vt* 接近
inheritance *n* 遗传
carbonic *a* 含碳的。～ acid:碳酸
simplify *vt* 使简化
release *vt* 释放
ammonia *n* 氨
nitrate *n* 硝酸盐
hormone *n* 激素
chlorosis *n* 褪绿病

dieback *n* 枯梢病
chlorine *n* 氯
boron n 硼
sodium *n* 钠
copper *n* 铜
molybdenum *n* 钼
silicon *n* 硅
aluminum *n* 铝
cobalt *n* 钴
fluorine *n* 氟
iodine *n* 碘
selenium *n* 硒

Notes to the Text

(1)one division is based on……, rather than on……:一种区分是根据……,而不是根据……。
(2)for photosynthesis to take place:为了进行光合作用。这是 for+名词+动词不定式结构作目的状语,其中的名词就是后面的动词不定式的行为主体。
(3)句子中的第一个 it 是主语,代表 potassium,第二个 it 代表后面的动词不定式短语 to move from……。for 引起的短语(for these nutrients)说明动词不定式行为的主体。
(4)in place of……:代替……。

Lesson 4

Organic Matter in the Soil

Unlike mineral matter, the amount of organic matter in a soil can vary very considerably from time to time[1]. In most fertile soils it is about 3—5% of the dry weight of the soil, but organic soils (e. g. black fens and peats) consist almost entirely of organic matter. It may remain for a short time in the undecayed state and as such[2] help to "open up" the soil. This could be harmful on sandy soils. However, the organic matter is soon attacked by all sorts of soil organisms — bacteria, fungi, earthworms, insects, etc. When they have finished eating and digesting it, a complex, dark coloured, structureless material called humus remains. The materials produced during the breakdown process are very beneficial in restoring and stabilizing a good soil structure.

The amount of humus formed is greatest from plants which have a lot of strengthening (lignified) tissue (e. g., straw). Humus is finally broken down by an oxidation process which is not fully understood.

The amount of humus which can remain in a soil is fairly constant for any particular type of soil. The addition of more organic matter often does not alter the humus content appreciably because the rate of breakdown increases. Organic matter is broken down most rapidly in warm, moist soils which are well limed and well aerated. Break down is slowest in waterlogged, acid conditions.

The chemical make-up of humus is not fully understood but its effects on the soil are well known.

Like clay, it is a colloid (i. e., it is a gluey substance which behaves like a sponge—it absorbs water and swells up when wetted and shrinks on drying). The humus colloids are not so gummy and

plastic as the clay colloids but they can improve light (sandy) soils by binding groups of particles together[3]. This reduces the size of the pores (spaces between the particles) and increases the water-holding capacity. Humus can also improve clay soils by making them less plastic and by assisting in the formation of a crumb structure—lime must also be present. Earthworms help in this soil improvement by digesting the clay and humus material with lime.

Plant nutrients—particularly nitrogen and phosphorus—are released for uptake by other plants when organic matter breaks down. The humus colloids can hold bases such as potassium and ammonia in an available form. In these ways it has a very beneficial effect in promoting steady crop growth.

Organic matter in the soil may be maintained or increased by growing leys, working in[4] straw and similar crop residues, farmyard manure, compost, etc. The roots and stubble are usually sufficient to maintain an adequate humus content in a soil growing cereals continuously.

In areas where erosion by wind and water is common, mineral soils are less likely to suffer damage if they are well supplied with humus.

Where it is possible to grow good leys and utilize them fully, this[5] is one of the best ways of maintaining a high level of organic matter and a good soil structure.

Increasing the organic matter (humus) content of a soil is the best way of increasing its water holding capacity: 50—60 t/ha (20—25 tons/acre) of well rotted farmyard manure may increase the amount of water which can be held by 25% or more.

New Words

considerably *ad* 相当大地,……得多
fen *n* 沼泽
peat *n* 泥炭
entirely *ad* 完全地
undecayed *a* 未腐烂的
bacterium *n* 〔复 bacteria〕细菌
fungus *n* 〔复 fungi〕真菌
earthworm *n* 蚯蚓
digest *vt* 消化
structureless *a* 无结构的
breakdown *n* 分解
beneficial *a* 有益的
restore *vt* 恢复
stabilize *vt* 使稳定
strengthen *vt* 加强
lignify *vt* 使木质化
oxidation *n* 氧化
fairly *ad* 相当地
constant *a* 恒定的
appreciably *ad* 明显地
lime *n* 石灰
aerate *vt* 使通气
waterlogged *a* 渍水的,积水的
make-up *n* 组成,构成
colloid *n* 胶体
gluey *a* 胶质的,粘着的
behave *vi* 举止,表现
sponge *n* 海绵
swell *vi* 膨胀,增大
shrink *vi* 收缩,缩小
gummy *a* 胶粘的,粘性的
plastic *a* 有塑性的
bind *vt* 束缚,使结合
crumb *a* 碎屑
uptake *n* 摄取
base *n* 碱,碱类