

全国高等医药院校试用教材
(供医学、中医、儿科、口腔、卫生专业用)

英 语

第 三 册

上海第二医学院 主编

人 民 卫 生 出 版 社

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主编单位

上海第二医学院

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编写说明

本书是卫生部组织编写的高等医药院校英语教材，供医学、中医、儿科、口腔、卫生专业使用。第一、二册供基础阶段用，占学时 180 左右。第三册供阅读提高阶段用，占学时 100 左右。第四册根据各不同专业分为医学分册、中医分册、儿科分册、口腔分册、卫生分册等五种，供自学用。另一册为英语语法，供查阅参考。

第三册共 20 课。每课词汇量 50 左右。每课教学占 4~6 学时。课文内容以科普性文章和病理、微生物学、寄生虫学等医学基础文章为主。每课项目有：课文、词汇表、注释、替换词练习、练习和阅读材料。本书课文词汇释义采用英汉双解方式，借以巩固和充实基础词汇。

第三册书末附有“补充读物”，“英汉对照药物说明书”和“总词汇表”。“补充读物”也有 20 篇，各篇内容密切配合各课内容，学有余力的同学可把两者结合使用。

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对本书的缺点和错误，希望各院校在使用过程中提出宝贵意见，以便今后修订提高。

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Lesson One

Text

The Life Processes

Living things have to¹ carry on certain processes in order to live. Energy is necessary for these processes, and the energy is normally obtained from foods. Green plants, in the presence of sunlight, are able to trap the sun's energy and through a series of complicated chemical steps transfer the energy to the food which they manufacture. Thus, green plants are able to secure energy from sunlight. Animals, on the other hand², depend upon plants or other animals that have eaten plants for their energy. With energy available³, living organisms perform certain functions which are known as life processes. These processes, in general, are characteristic⁴ of all living things and occur basically in the cells of living things.

Movement. All living things show spontaneous movement to a greater or lesser degree⁵. Animal movement is very noticeable. Movement in plants is not so apparent although time-lapse photography shows the pattern of movement in the opening of a flower blossom.

Responsiveness (irritability). Living matter is known as protoplasm and is highly responsive. That is⁶, it reacts to many different stimuli. A stimulus is anything that initiates the response in the protoplasm.

Growth and reproduction. Growth is a characteristic of living things. Cells may grow through increase in size. The size of a living thing may also get⁷ larger by an increase in the number of cells in the organisms.

The process by which living things give rise to new organisms is known as reproduction. There are several ways whereby⁸ new organisms are formed by simple cell division.

Nutrition. Protoplasm is composed of matter, and it is necessary for all living things to obtain materials for the growth and repair of protoplasm. This means that organisms must secure food and that the food must be in such a form that it can be used by the protoplasm⁹. The life activities concerned with obtaining and using food are grouped under the general term nutrition.

Respiration. Respiration occurs in all living cells. Respiration is a series of processes whereby the energy of food is released. Oxygen is required for the release of the stored energy in foods and this is why¹⁰ oxygen is needed by all living things, both plants and animals¹¹.

Excretion. In movement, growth, respiration, and the other activities of protoplasm, waste products are produced. The removal of wastes is known as excretion. Wastes must usually be removed from the cells and the body in order for the organism to continue to function properly. Many organisms have special structures or organs of excretion. The lungs, kidneys, and skin are excretory organs.

Metabolism. Metabolism is the term used to include all the chemical and energy changes in a living organism. These changes result in¹² growth, repair, respiration, nutrition, secretion, and excretion.

Word List

energy ['enədʒi] *n.* capacity for, power of, doing work 能量, 能

normally ['nɔ:məli] *ad.* usually or regularly 通常地; 正常地

green [gri:n] *a.* of the colour between blue and yellow in the spectrum, the colour of growing grass 绿色的

plant [plɑ:nt] *n.* living organism which is not an animal 植物

presence ['prezns] *n.* being present in a place 出席, 在场

in the ~ of 在...参加的情况下; 在...面前

sunlight ['sʌnlait] *n.* the light of the sun 日光, 阳光

trap [træp] *v.* catch 捕捉

sun [sʌn] *n.* the heavenly body from which the earth gets warmth and light 日, 太阳

series ['siəri:z] *n.* (pl. unchanged 复数不变) number of things, events, etc., each of which is related in some way to the others 连贯的东西, 事件等; 系列

a ~ of 一系列; 一套

chemical ['kemɪkl] *a.* of, made by chemistry 化学的

step [step] *n.* 1. one action in a series of actions with a view to effecting a purpose
步骤; 措施 2. act of stepping once 走; 举步

transfer [træns'fɜ:] *v.* change position, move (from...to...) 转移

manufacture [mænju'fæktʃə] *v.* make, produce (goods etc.) on a large scale (by machinery) 大量生产; 机器制造

secure [si'kjʊə] *v.* succeed in getting 获得

eat [i:t] (ate [eit], eaten ['i:tɪn]) *v.* take (solid food, also soup) into the mouth and swallow it 吃

available [ə'veɪləbl] *a.* capable of being used; that may be obtained 可用的, 有效的; 可获得的

basically ['beɪsɪkəli] *ad.* fundamentally; essentially 基础地; 基本地

spontaneous [spɒn'teɪnjəs] *a.* done, happening, from natural impulse not caused or suggested by sth. or sb. outside 自然的; 自发的

movement ['mu:vmənt] *n.* moving or being moved; activity (contrasted with quiet and rest) 移动; 运动; 活动(与安静及静止相对)

noticeable ['nəʊtɪsəbl] *a.* easily seen or noticed 易见的; 显著的

apparent [ə'pærənt] *a.* clearly seen or understood 显然的; 明白的

although [ɔ:l'dəʊ] *conj.* in spite of the fact that; notwithstanding the fact that 虽然, 虽则

lapse [læps] *n.* (of time) passing away; interval (指时间)流逝; 间歇
time-lapse 慢转速拍摄后用普通转速放映的

photography [fə'tɒgrəfi] *n.* art or process of taking photographs 摄影术

pattern ['pætən] *n.* 1. way in which sth. happens, develops, is arranged 方式

2. excellent example 模范; 典型

flower ['flaʊə] *n.* that part of a plant that produces seeds 花

blossom ['blɒsəm] *n.* a condition or time of flowering 开花; 开花期

responsiveness [rɪs'pɒnsɪvnis] *n.* the quality or state of responding, answering 反应; 敏感

irritability [ɪrɪtə'bɪlɪti] *n.* the ability, as in living plants, animals, or cells, to respond to light, heat, and other stimuli, as by activity 过敏; 应激性; 感应

highly ['haɪli] *ad.* in or to a high degree 高度地; 非常地

react [ri(:)'ækt] *v.* 1. respond (to) 反应(与 to 连用); 2. have an effect (on, upon, the person or thing acting) 对...有效果; 起作用(与 on, upon 连用)

stimulus ['stɪmjʊləs] (pl. stimuli ['stɪmjulaɪ]) *n.* sth. that stimulates 刺激(物)

anything ['eniθɪŋ] *pron.* any object or fact 任何事(物)

initiate [ɪ'nɪʃieɪt] *v.* begin; set (a scheme, etc) working 开始; 着手(计划等)

growth [graʊθ] *n.* growing, development; process of growing 生长; 发展; 生长过程

reproduction [ri:prə'dækʃən] *n.* the act or process of reproducing; the process by which living things give rise to others of the same kind 再生产; 生殖
 whereby [h'wɛə'baɪ] *ad.* by or through which; by means of which 靠那个
 division [di'vɪʒən] *n.* the act of separating into two or more parts 分裂
 repair [ri'pɛə] *n.* repairing or being repaired 修理; 补救
 release [ri'li:s] *v.* allow to go; set free; unfasten 释放, 解放; 免除
 excretion [eks'kri:ʃən] *n.* 1. the act or process of excreting 排泄; 分泌 2. that which is excreted 排泄物; 分泌物
 produce [prə'dju:s] *v.* manufacture; make; grow; create 制造, 生产; 生长; 创造
 removal [ri'mu:vəl] *n.* act of removing 移动; 除去; 切除
 properly ['prɒpəli] *ad.* in a proper manner 适当地; 正当地; 适合地
 skin [skin] *n.* elastic substance forming the outer covering of the body of a person or animal (人或动物之)皮; 皮肤
 include [in'klud] *v.* contain or take in as a part or parts of a whole 包括; 包含
 result [ri'zʌlt] *v.* have as an effect; finish; end 发生; 有……结果

Notes

1. have to (不定式) = must 例如:

The kidneys *have to* remove variable amounts of water from the blood.

We *had to* wash the walls and floor of the ward with sterilizing solution to help the patient avoid bacterial infection.

这里 have 与不定式一起构成复合谓语。

2. on the other hand 相反, 从另一方面来说。本词组常与 on the one hand 连用。on the one hand... (and) on the other (hand) ...的意思是“一方面…而另一方面…”。例如:

On the one hand, hemoglobin unites with oxygen; *on the other (hand)*, it liberates oxygen in the plasma of blood.

3. with energy available 有了可利用的能量

4. characteristic 用作形容词时常与介词 of 连用, 表示是……的特征。例如:

Diffusion is *characteristic of* all gases.

characteristic 也常用作名词。例如:

Diffusion is a *characteristic* of all gases.

5. to a greater or lesser degree 或多或少地

6. that is 那就是 在本句里作插入语。

7. get 在这里用作连系动词, 意思是“变得”。

8. whereby = by which, by what

whereby 引导的是定语从句。

9. 本句中有三个 that, 第一和第二个 that 引导的是宾语从句, 第三个 that 引导的是结果状语从句。

10. why 引导的是表语从句。
 11. both plants and animals 是 all living things 的同位语。
 12. result in 引起, 结果形成 例如:
 Great loss of blood may *result in* shock.

Substitution Drills

1. Living things have

to carry on certain processes
to obtain energy from foods
to undergo continuously a series of changes
to perform certain functions

 in order to live.

2. Energy is necessary for

life processes.
all living things.
green plants.
animals.
movement.

3. In the presence of sunlight green plants

are able to trap
are capable of trapping
can trap
can obtain
can catch

 the sun's energy.

4.

In general,
Generally,
Generally speaking,
In all ordinary cases,

 life processes are characteristic of all living things.

5. All living things

show spontaneous movement to a greater or lesser degree.
more or less show spontaneous movement.
somewhat show spontaneous movement.
show spontaneous movement in some degree.

6. Animal movement is very noticeable.
quite apparent.
easily seen.
7. Living matter is known as
is said to be protoplasm.
8. Protoplasm is highly responsive.
reacts to many different stimuli.
responds readily to a number of different stimuli.
9. Cells may grow through increase in size.
in the presence of good conditions.
rapidly or slowly.
under good nutrition.
10. The process by which
whereby living things give rise to new organisms is known as reproduction.
11. New organisms are formed
reproduced
brought about
caused to happen by simple cell division.
12. Protoplasm is composed of
is made up of
consists of matter.
13. All living things must obtain
have to obtain
must get
must secure materials for the growth and repair of protoplasm.

14. The life activities concerned with obtaining and using food

are grouped under the general term nutrition.
are generally classed as nutrition.
are generally called nutrition.

15. Respiration occurs in all

living cells.
living organisms.
living things.
plants.
animals.

16. Respiration is a series of processes whereby the energy of food is

released.
liberated.
set free.

17. Oxygen is

required
needed
necessary
wanted

for the release of the stored energy in foods.

18. In movement, growth, respiration, and the other activities of protoplasm, waste products

are produced.
are found.
are formed.
occur.

19.

The removal of
The act of getting off
The act of getting rid of

wastes is known as excretion.

20. Metabolism is the term

used
that is used
which is used
employed

to include all the chemical and
energy changes in a living organism.

21. These changes

result in
affect
have an effect on
influence

growth, repair, respiration, nutrition,
secretion, and excretion.

Exercises

1. Complete the following sentences with the words from the text,

- 1) Living things...certain processes in order to live.
- 2) Green plants, in the presence of sunlight, ...the sun's energy.
- 3) Animals depend upon plants or other animals...
- 4) Life processes, in general, are...all living organisms.
- 5) Movement in plants is..., although time-lapse photography shows the pattern of movement in the opening of a flower blossom.
- 6) A stimulus is...that initiates the response in the protoplasm.
- 7) The size of a living thing...by an increase in the number of cells in the organisms.
- 8) The process...living things give rise to new organisms is known as reproduction.
- 9) Oxygen is...for the release of the stored energy in foods.
- 10) Wastes must usually be removed from the cells and the body...the organism to continue to function properly.

2. Put in the missing words, using the right phrase from the list below in the proper form;

give rise to, carry on, be known as, have to, be able to, result in, in the presence of, a series of

- 1) Green plants_____secure energy from sunlight.
- 2) Living matter_____protoplasm and is highly responsive.
- 3) The process by which living things_____new organisms is called reproduction.
- 4) Respiration is_____processes whereby the energy of food is released.
- 5) Metabolism_____growth, repair, respiration, nutrition, secretion and excretion.
- 6) Living things have to_____certain processes in order to live.
- 7) Green plants trap the sun's energy_____sunlight.
- 8) Organisms_____secure food in such a form that it can be used by the protoplasm.

3. Cross out the wrong prepositions in each bracket of the following sentences and then translate each sentence into Chinese:

- 1) Energy is necessary (with, for, in) life processes.

- 2) Animals depend (on, over, in) plants or other animals that have eaten plants for their energy.
- 3) Life processes, in general, are characteristic (in, on, of) all living things.
- 4) Protoplasm reacts (for, on, to) many different stimuli.
- 5) Cells may grow through increase (from, by, in) size.
- 6) There are several ways (from, in, by) which new organisms are formed by simple cell division.
- 7) The life activities concerned (in, with, of) obtaining and using food are grouped under the general term nutrition.
- 8) This is why oxygen is needed (in, by, for) all living things, both plants and animals.

4. Answer the following questions:

- 1) What do living things have to do in order to live?
- 2) Where do they normally obtain the energy?
- 3) Through what steps do green plants transfer the energy to the food which they manufacture?
- 4) What functions do living organisms perform with energy available?
- 5) What movement do all living things show to a greater or lesser degree?
- 6) How could one prove there is movement in plants?
- 7) What is a stimulus?
- 8) How may the size of a living thing get larger?
- 9) What process is known as reproduction?
- 10) What is necessary for all living things for the growth and repair of protoplasm?
- 11) What life activities are grouped under the general term nutrition?
- 12) What processes is respiration?
- 13) Why is oxygen needed by all living things?
- 14) When are waste products in the cells and the body produced and why must they be removed?
- 15) What organs are the excretory organs?
- 16) What is metabolism?

5. Translate the following into English, using the expression(s) given in each bracket;

- 1) 所有生物多少都表现有自发的动作。(to a greater or lesser degree)
- 2) 通过生物产生新的生物的过程通称为繁殖。(give rise to, be known as)
- 3) 在阳光下, 绿色植物能获取太阳能。(in the presence of)
- 4) 这些变化引起生长、修复、呼吸、营养、内分泌和排泄的过程。(result in)
- 5) 另一方面, 动物依靠植物或其他动物而取得能量。(on the other hand, depend upon)

Reading Material

Metabolism

Each living cell gets from the surrounding medium the nutritive material and oxygen that it needs. Within the cell the nutritive material undergoes changes and is absorbed. That is, it is converted into the substance of the living cell. Alongside with this building up process, the substance of the living cell is constantly subjected to a partial breaking down process and to oxidation. As a result, products are formed and eliminated.

Thus, there is a continual, uninterrupted interchange of substances between the cell and its surrounding medium. When metabolism stops, life ceases. Metabolism also goes on in non-cellular living matter.

One of the most essential symptoms of life is excitability, i. e., the ability to respond to irritation, or, as it is usually said, to react to the various changes that go on in the surrounding medium.

Excitability, as all other symptoms of life, disappears immediately if metabolism ceases.

The continuous chemical changes of the protein particles are the basis of metabolism and, consequently, also of life. On the other hand, when metabolism ceases, the proteins begin to decompose. That is, they cease to exist.

"Life," says Engels, "is the mode of existence of protein bodies, the most essential factor of which is the uninterrupted exchange of substances between protein bodies and the external world that surrounds them; when this exchange of products ceases, life also ceases, which results in the decomposition of protein."

undergo [ʌndə'gou] (underwent

[ʌndə'went], undergone [ʌndə'gɒn])

v. 经历; 经过(变化等)

convert [kən've:t] *v.* 变换; 转化

alongside [ə'lɒŋ'saɪd] *ad., prep.* 并排

地; 并肩地; 在...旁边; 与...并肩

subject [səb'dʒekt] *v.* 使受到; 使遭遇

partial ['pɑ:ʃəl] *a.* 部分的; 不完全的

oxidation [ɒksi'deɪʃən] *n.* 氧化(作用)

continual [kən'tɪnjuəl] *a.* 不断的; 频繁的

uninterrupted [ʌnɪntə'ræptɪd] *a.* 不间断

的, 不停的

non-cellular [nɒn'seljələ] *a.* 非细胞的

excitability [ɪksaɪtə'bɪlɪtɪ] *n.* 兴奋性

irritation [ɪrɪ'teɪʃən] *n.* 刺激

particle ['pɑ:tɪkl] *n.* 粒子, 微粒

consequently ['kɒnsɪkwəntli] *ad.* 因而,

所以

mode [maʊd] *n.* 方式, 样式

exchange [ɪks'tʃeɪndʒ] *v.* 交换; 交流

decomposition [di:kɒmpə'zɪʃən] *n.* 分解(作用)

Lesson Two

Text

Some Functional Parts of the Cell

Living things may be single-celled or composed of many cells. The most familiar plants and animals are composed of many cells. The living cell is the smallest organization of material that shows the characteristic of life. This living material is called protoplasm. It is the protoplasm that carries on the life processes, such as nutrition and respiration¹.

Size and shape. Cells are usually microscopic in size. Bacterial cells are among the smallest of living things. Viruses are much² smaller than cells but they must be within living cells to reproduce³. For this reason⁴ some scientists do not consider them to be living things⁵. Some cells are large enough⁶ to be seen with the naked eye. The egg of a chicken is such a cell. In large animals some nerve cells may be 3 or 4 feet⁷ long.

The shape of cells varies greatly. Bacterial cells may be round, rod, or spiral shaped. There is some tendency for cells to be spherical or round shaped. However, cells may be almost any shape. The shape of a cell or cells often helps in identifying an organism or a part of a living thing. Human red blood cells are biconcave disks. The shape of muscle cells differs from that of nerve cells. In many cases, cells appear to be shaped as an adaptation for performing a specific function. However, cells do⁸ have some common structural characteristics.

Nucleus. The nucleus is usually to be observed⁹ as a circular structure in the center of the cell. The nucleus contains DNA (deoxyribonucleic acid). DNA is considered to be a combination of chemical elements which initiates the directives or messages for all the activities of the cell including the transmission of hereditary characteristics. It is a most important substance and is found