COLLEGE BASIC PROFESSIONAL ENGLISH

Of Geology & Mineral Engineering

大学专业基础英语

地矿分册

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中南工业大学教材科

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序

为适应国家发展的需要，为迎接人才市场的竞争，学校决定要进一步提高大学生的外语水平。如何提高，有什么措施？有三条：一曰“加粗一条线”，即大学四年必须年年学外语、用外语、四年不断线，这一条线要加粗。基础外语两年，要进一步提高教学水平，提高课堂效率，改进教学效果；通过四级水平考试以后，三、四年级的学生还须继续学好“专业外语”，最后一学期则应该结合毕业论文与设计查阅和利用外文文献，边用边学，边巩固边提高；第二条措施叫“把好两道关”，第一关即基础外语四级水平考试关，不通过这一关不能学习后续的外语课，不通过这一关拿不到毕业证；第二关，是专业外语关，专业外语也要在毕业前进行校内统考，这一关过不了的也不能算是合格的大学生。学专业外语就是为了更快更好更有针对性地掌握和运用外语工具，真正做到有的放矢，学以致用。第三条措施是搞好“三结合”：即外语课、专业基础与专业课以及创造学用外语的环境和气氛，三方面紧密结合。我们坚持提倡有条件的专业课或专业基础课尽量使用部份或全部的外文教材，尽量全部或部份地用外语讲授。

目前，在执行这三条措施中急待改革和加强的是“专业外语”课的教学。各专业都有各自的做法和经验，但总结交流不够，从学校乃至全国范围来说，对本课程的设置缺乏明确具体的要求和有效的办法，在教学内容上，对这种特殊用途的外语的意念表达，结构特点，惯用文体以及专业词汇等方面都缺乏明确具体的设计目标，因而影响了教学效果和效率。

这套专业英语教材就是适应改革与加强的要求，聘请了外语教授、留学回国又有专业英语教学经验的有关专家们共同合作，经过较长时

间的研讨和准备，并经过试用与修订，才正式出版的，我们希望全体任课教师与学习者共同参与这项改革与探索，通过大家的共同努力，使我校学生的整体外语水平有一个较大的提高。

副校长、教授：梅　炽

一九九四年一月二十八日

前　言

《大学专业基础英语》是供大学文、理、工科本科学生第六学期进入专业英语阅读阶段而编写的一套教科书，分地矿、机电、冶化、法贸四分册。

地矿分册既重视英语语言的训练，又重视地矿系列各专业当代最新知识的传授。本教材语言地道，选材新颖，体裁多样，风格各异，有论文、报告、评述和概论等。课文和阅读材料均精选自国外近年来出版的原版图书，有的目前国内尚无统一的专业术语。本教材以反映各专业性质、特点、任务和内容的一般性文章为主。对本专业学生具有引导入门的作用；对外专业学生也有便于理解接受，扩大知识面，引起兴趣的作用。

本教材共十八单元，内容包括地质、物探、勘工、测量、采矿、选矿等学科和专业，还选入物质结构与分类和计算机常识等。课文编排顺序具有内在联系和逻辑性。为帮助学生参加全国英语六级统考和研究生考试，本教材除与课文内容有关的练习外，还增加了多项选择、填空、综合填空、改错和阅读材料，还附有科技英语翻译技巧等。另配有教师参考用书。通过本教材的学习，不但对英语知识有所巩固提高，还可以扩大专业知识面。

参加本教材编写的有王殿江（第一、二、十单元），戴塔根（第三、四、五、六单元），李建雄（第七、十一、十二、十三单元），周子勇（第八、九、十七、十八单元），章顺力（第十四、十五、十六单元），张承平各单元的Ⅵ、Ⅶ、Ⅷ练习），罗英豪（科技英语翻译技巧）。[redacted]

中南工业大学教务处、校专业外语建设委员会领导本教材的编写工作。梅炽副校长对本教材给予了高度的支持和关注，并写“序言”。教材科负责本教材的印刷装订工作。对所有支持和帮助本教材编写的人员和单位，我们特在此表示衷心的感谢！

由于时间仓促，水平有限，经验不足，本教材缺点和错误在所难免，恳请提出宝贵意见。

编　者

1994.3

CONTENTS

Unit One

Before Reading

1. Look up the following words in your dictionary and make a note of their meanings.

discipline	attribute	vaporization	homogeneity
identical	heterogeneous	solute	droplet
concentration	disperse	carbonate	

2. Main idea of the text:

Extensive properties of a sample of matter depend on the size of the sample; intensive ones do not. A pure substance is one that contains only molecules or atoms of a single kind. If all of the atoms in a substance are alike, the substance is an element. If there is more than one kind of atom in a substance but all the molecules are alike, the substance is a compound. A uniform substance, which has identical properties throughout, is said to be homogeneous; a nonuniform one is heterogeneous. A homogeneous portion of matter that is separated from other parts of the sample by a surface or boundary is called a phase. A uniform mixture of atoms or molecules of different kinds is a solution.

Text

CLASSIFICATION OF MATTER①

Every discipline has its own language, and chemistry is no exception. Since chemistry deals with the properties and transformations of materials, chemists describe and classify matter in various ways. Most of this usage will emerge as this book unfolds, but it will be helpful, as a start, to outline some of the language of chemisty.

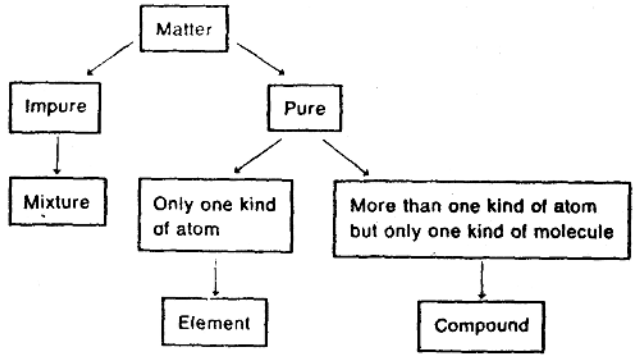
It is easy to recognize that cutting a wooden chair causes a change in the chair different from the change brought about by burning it, because the properties we associate with wood as a material—such as its color, density, and hardness—are changed by burning but not by cutting.② Properties that depend on thd size of a sample of matter are called extensive properties; those that are independent of the size of the sample are intensive properties. Mass and volume are examples of extensive properties—they are characteristic of a particular object. Color, hardness, density, melting point, and freezing point are examples of intensive properties—they are characteristic of a particular substance or material, in other words, a particular kind of matter. Handbooks of chemistry, physics, and engineering list the intensive properties of materials. Catalogs and marketing brochures for automobiles, furniture, and computers specify extensive properties of those items in their descriptions.

Matter may be classified according to its purity, its homogeneity, and its physical state, as well as by many other attributes. Physical states—such as gas, liquid, and solid—are the subjects of Chapters 10 and 11. Here we will introduce the concepts of purity and homogeneity.

PURITY

A material or substance is characterized by its intensive properties. Sugar (table sugar, also called sucrose) is a sweet solid at room temperature; water is a liquid with little taste. Suppose you taste a clear, colorless liquid and find it to be sweet, You know that it cannot be sugar, for it is liguid, and that it cannot be water, since it is not tasteless. Imagine further that you heat the liquid to boiling and the escaping vapor, when cooled, condenses to form water. ⑨When the vaporization is complete, sugar remains behind. It would be reasonable to conclude from these results that the original sweet liquid was a mixture of sugar and water, because the component substances separated out of the mixture and because some of their intensive properties, such as sweetness, persisted in the mixture.

If you have had even a brief introduction to chemistry or to general science before reading this book, you may consider the preceding discussion to be obvious and unnecessary. Of course sugar water is a mixture, you may know, since it contains water molecules and sugar molecules, which are different. Water consists only of water molecules, and sugar only of sugar molecules, so these are pure substances. These statements are correct, and a pure substance may therefore be defined as one that contains only molecules or atoms of a single kind. If all of the atoms are alike, the substance is an element. If there is more than one kind of atom but all of the molecules are alike, the substance is a compound. This classification can be pictured:



If you don't know the atomic or molecular compositon of a substance, however, how do you know whether or not it is pure?The answer to this is not obvious. The question can be resolved only by experiments of the type described in the previous paragraph about sugar water. The intensive properties of an impure substance, or mixture, can change progressively as various processes are applied to it. Sugar water gradually becomes sweeter when water e

vaporates from it and the remaining sugar becomes more concentrated. Is gasoline a pure substance? Let a gallon of it sit outdoors in an open dish (away from flames) until it has evaporated to half its original volume. If you test the octane rating of the remaining half-gallon, you will find that it is different from that of the original ,unevaporated gallon. From this fact alone, and without knowing anything about gasoline's molecular compostion, you can be sure that it is an impure substance.

A pure substance has a fixed set of intensive properties. Because of this constancy, pure substances are more suitable than mixtures for experiments that are designed to elucidate chemical principles. The tasks of tracing the pathways of chemical transformations, learning how to synthesize new substances, or finding how to prevent the formation of unwanted ones are difficult enough when one deals with impure substances. Therefore, chemists generally prefer to start with pure materials and apply the principles that are learned from them to mixtures.

HOMOGENEITY

If you divided a liter of agsoline into one hundred 10-mL portions and measured the properties of each portion, you would find that the properties of each portion are identical. The same identites would hold if you divided one of the 10-mL portions into droplets. In fact, all samples, no matter how small, that could be manipulated by laboratory equipment or observed with the most powerful microscope would be found to be identical. ①Such a uniform substance is said to be homogeneous. A substance whose properties differ from sample to sample is heterogeneous.

In a sample of matter, any homogeneous portion that has uniform properties and is separated from other parts of the sample by a definite surface or boundary is called a phase. Thus , a mixture of ice and water is a two-phase system(Figure 1a). If sand and cottonseed oil are added to that mixture, the sand sinks to the bottom and the oil and ice float to the top, making it a four-phase system of ice, water, sand, and oil (Figure 1b). A phase need not be all in one piece. Each ice cube shown in Figure 1a is not a separate phase.

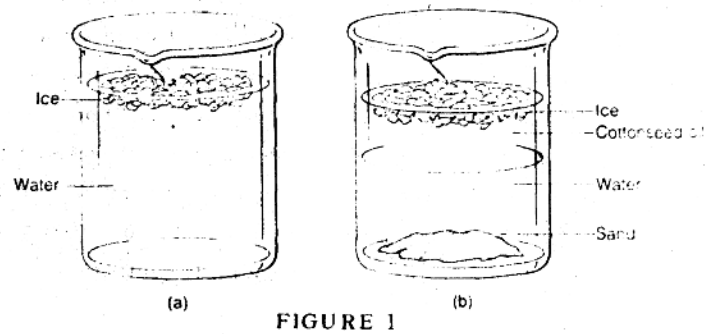


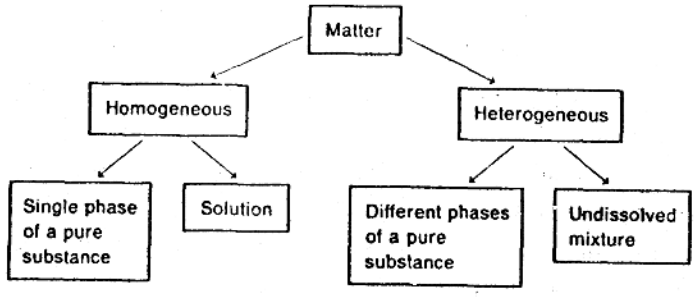
FIGURE 1

(a)ice and water—a two-phase system.

(b)ice, water, sand, and cottonseed oil—a four-phase system.

Homogeneous matter is not necessarily pure. An impure substance, or mixture, can be homogeneous if the molecules or atoms of its various components are uniformly mixed. The reason is that the smallest sample of a substance that can be handled or manipulated contains very many atoms or molecules, and if the atoms or molecules are uniformly mixed, all samples will be identical. Such a uniform mixture is called a solution. A solution is therefore a single phase. Gasoline is a solution. So are air , vinegar, olive oil, and the carbonated mixture kept under pressure in a bottle or can of soft drink. When solids or gases are dissolved in a liquid, the solid or gas is called the solute and the liquid is called the solvent. Thus, sugar or ammonia(the solute) dissolves in water(the solvent). When one liquid dissovles in another liquid, the more abundant substance is usually considered to be the sovlent, but when the quantities are nearly equal, it doesn't matter which is designated the solvent and which the solute.

Similarly, heterogeneous matter is not necessarily impure. A mixture of ice and water is heterogeneous since it consists of more than one phase, but it is a single substance, because each phase consists only of water molecules. Accordingly, matter can be classified according to its homogeneity by this scheme:



Words are not always used in everyday language as they are defined in books. "Pure water" often means water that contains small natureal concentrations of harmless and perhaps tasty mineral matter but which is free from noxious or smelly contaminants. Similarly, "pure air" consists of more than one kind of molecule; it is a mixture of various gases. It is said to be "pure"if it is not polluted with unwanted substances. Is "homogenized" milk homogeneous? The answer is yes if you compare different samples of it teaspoon by teaspoon. But if it is examined by more refined optical methods, it is seen to contain droplets of milk fat dispersed in a "skim-milk" medium; the answer, then , is that it is heterogeneous.

Remember that the meaning of a word is often in its context.

New Words and Phrases:

extensive property		广度性质,广延性质
intensive property		强度性(质)
table sugar		蔗糖
sucrose	n.	蔗糖,砂糖
octane	n.	(正)辛烷,辛烷值
octane rating		辛烷值
synthesize	v.	(人工)合成;综合
manipulate	v.	操作[纵],控制,管理;键控
homogeneous	a.	同族[质,次]的;均质[匀]的,单一的
ammonia	a.	氨(水)
cotaminant	n.	杂质,污染物,沾染物
skim	v. &n.	(从液体表面)撇(去,取),撇清;刮削,铲削
	a.	表面层被撇去的
skim-milk		脱脂乳

Notes to the Text

①The text is selected from General Chemistry(Fifth Edition),Ed. by Brescia F. et al, Harcourt Brace Jovanovich, Publishers, Florida, 1988.

②It is easy to recognize that cutting a wooden chair causes a change in the chair different from the change brought about by burning it, because the properties we associate with wood as a material—such as its color, density, and hardness—are changed by burning but not by cutting.

在 that 从句中,cutting a wooden chair 是主语;different from the change brought about by burning it 是修饰前面的 a change 的后置定语;而 brought about by burning it 又是 the change 的后置定语。

在 because 引导的原因状语从句中,we associate with wood 为修饰 the properties 的定语从句;两个破折号之间的部分是 the properties 的同位语。

(显然,切割一把木制椅子引起的变化与燃烧它发生的变化是有差别的,因为我们所关注的木料这种物质的性质,如颜色,密度和硬度等,是通过燃烧改变的,而不是通过切割。)

③Imagine further that you heat the liquid to boiling and the escaping vapor, when cooled, condenses to form water.

这是一个祈示句与陈述句构成的并列句. when cooled 为省略句,插在陈述句主语 escaping vapor 和谓语 condenses 之间,这种语言现象在科技英语中常见。

(进一步假定你把该液体加热至沸腾,散发出的蒸汽冷却后凝结为水。)

④In fact, all samples, no matter how small, that could be manipulated by laboratory equipment or observed with the most powerful microscope would be found to be identical.

本句中，all samples 为主句主语，that 从句为定语，它被让步状语 no matter how small 所隔开；would be found 是主句谓语动词。

（事实上，所有试样，无论多么小，都可用实验仪器处理或采用最精密的显微镜加以观察，并发现其相同性。）

Exercises

Ⅰ. Answer the following question.

1)What is the difinition of "extensive properties"?

2)Give a difinition of "mixture".

3)How do you understand "pure substance"?

4)Why is homogeneous matter not necessarily pure?

5)What is the concept of "solution"?

6)How do you understand "the meaning of a word is often in its context"?

7)How and why can a mixture or impure substance be homogeneous? Give an example of it.

8)how do you distinguish whether or not a substance is pure, if you do not know the compostion of it?

9)Matter is classified in two different ways in the text. What are they?

10)Why and how can a heterogeneous substance be pure?Give an example of it.

Ⅱ. Choose the best answer for each of the following questions or that completes the sentence.

1)Which of the following properties of a sample of matter is intensive?

A)volume　　B)mass

C)area　　D)desity

2). Milk is a(n)_____.

A)homogeneous solution　　B)heterogeneous undissolved mixture

C)heterogeneous pure substance　　D)impure homogeneous substance

3)Which of the following substance is homogeneous?

A)iron ore　　B)steam

C)vinegar　　D)egg

4)A mixture of water and ice is a _____.

A)pure homogeneous substance　　B)heterogeneous undissolved mixture

C)solution of compound　　D)hetergeneous pure substance

5)Which of the following properties of a sample of matter is extensive?

A)colour　　B)shape

C)hardness　　D)melting point

6)A compund is a _____.

A)mixture of two kinds of molecules　　B)Impure substance

C)pure substance that contains more than one kind of atom

D)homogeneous solution

7)Which of the following substances is not a mixture?

A)air　　B)a mixture of ice and water

C)granite　　D)Coca-Cola

8) Matter can be classified into the following two kinds according to its purity: _____.

A)impure and element　　B)pure and compound

C)pure and mixture　　D)element and compound

9)Which of the following four groups of substances are all pure compounds?

A)salt and water　　B)air and olive oil

C)diamond and quartz　　D)water and gasoline

10)Matter can be classified into two kinds—homogeneous and heterogeneous according to its _____.

A)purity　　B)chemical compostion

C)physical state　　D)composition of phase.

Ⅲ. Translate the following paragraphs into English.

化学家研究物质以及它在受控条件下是如何变化的。纯物质可以通过其特性加以识别，如氧在—183℃沸腾，水在100℃沸腾，而金刚石在3800℃熔化。为什么存在这些差别呢？化学的一个主要目标是发展用于解释物质这类性质及其它可观察性质的理论和模型。

原子是物质的基本单位，它是一种元素与其它原子结合的最小单位。分子是相互化学地结合在一起的原子的集合体。原子是由质子和中子构成的原子核组成的，质子带一个单位的正电荷，而中子不带电。一个质子或中子就是一个核子，原子的质量数等于其核子的数目。

Ⅳ. Translate the following paragraphs into Chinese.

A solution is a special kind of mixture, Mixtures can be classified according to the size of the particles of one component that are dispersed through another component. For example, if you mix some sand and water, the sand grains will disperse in the water and you will be able to see the grains with the naked eye; this mixture is called a suspension. After a while the sand will settle to the bottom becaue of gravity. Imagine doing this several times with progressively finer grains of sand. When you reached the point where the grains are very small, no bigger than dust particles, you would find that they do not sink to the bottom, no matter how long you wait. Then you would have a colloidal dispersion. Although the individual grains would be invisible, the mixture would appear cloudy in a strong beam of

light.

Now imagine that you stir some sugar into a glass of water. The grains disappear, and you have a clear liquid that looks just like pure water. Although solid sugar is no longer present, the liquid has a distinctive property of sugar, the sweet taste. You could correctly conclude that sugar molecules have dispersed among the water molecules and that sugar and water thus form a true solution.

A solution is a mixture of two or more substances dispersed as molecules, atoms, or ions rather than as larger aggregates. A solution may be a gas, a liquid, or a solid. Table 1 lists a few common examples of each. You can supply many other examples, such as tea, soda, windshield-washing liquid—almost everything we encounter is made of or contains solutions.

Table 1 (Examles of solutions)

SOLUTION	COMPONENTS
GASES	
Air	N_2, O_2, other gases
Water gas (fuel)	H_2, CO
LIQUIDS	
Seawater	H_2O, NaCl, $MgCl_2$, other salts
Gasoline	C_7H_{16}, C_8H_{18}, etc.
SOLIDS	
Brass	Cu, Zn
Soda-lime glass	Ca_2SiO_4, $Ca_2Si_2O_6$, Na_4SiO_4, $Na_4Si_2O_6$, etc.

V. Write an abstract of the text.

VI. Beneath each of the following sentences, there are 4 choices marked A, B, C, and D. Choose the one that best completes the sentence.

1. I was afraid things weren't going to _____ smooth for you.
   A. turn for B. turn out
   C. turn on D. turn up
2. In _____, the house is like the letter S.
   A. form B. figure
   C. shape D. pattern
3. "Are we _____ to arrive in town before dark?" "Yes, I think so."

A. likely　　B. probable

C. possible　　D. seeming

4. Aged and feeble, Mr. Swan paid _____ visits to his old friends lately.

A. scarce　　B. rare

C. insufficient　　D. inadequate

5. The flat we have rented is very _____ for the underground station.

A. suitable　　B. comfortable

C. convenient　　D. near

6. Why are you always so _____?You never smile or look cheerful.

A. angry　　B. sorry

C. unfortunate　　D. miserable

7. High in the sky a _____ of birds was flying southward.

A. flock　　B. swarm

C. pack　　D. herd

8. After his _____ in court which lasted a whole week, the murderer was sentenced to life imprisonment.

A. examination　　B. question

C. test　　D. trial

9. The gloves were really too small, and it was only by _____ them that I managed to get them on.

A. spreading　　B. squeezing

C. forcing　　D. stretching

10. The humour of the play was too _____ for the young audience and they rarely laughed.

A. detailed　　B. feeble

C. subtle　　D. slender

11. His acting in the play was remarkable, _____ his youth and inexperience.

A. taing care of　　B. taking into account

C. taking in　　D. taking advantage of

12. The doctor advised Jim to ———— fattening food.

A. stay out　　B. stay up

C. stay with　　D. stay off

13. It's no use _____ the girls to keep quiet. They can't help _____.

A. asking/to laugh　　B. to ask/laughing

C. asking/laughing　　D. to ask/to laugh

14. The government issued laws preventing agricultural land _____ to industries.

A. to sell　　B. to be sold

C. being sold　　D. from selling

15. It was the training that he had as a young man ———— made him such a good ora-

tor.

A. that　　B. what

C. has　　D. to

16. _____ he is wealthy does not necessarily mean that a man is greedy.

A. Just because　　B. That

C. The reason that　　D. For the reason

17. Our director recommended that my partner and I _____ present at the conference.

A. am　　B. be

C. are　　D. were

18. Because sheep _____ meat and wool, they are greatly valued in Inner Mongolia.

A. produces both　　B. both produce

C. produce both　　D. both produces

19. Not until a baby kangaroo is four months old _____ to live outside its mother's pouch.

A. is be beginning　　B. he begins

C. it begins　　D. does it begin

20. The good effects of the educational reform in China _____. It is the most successful one we have ever experienced.

A. cannot overestimate　　B. cannot be overestimated

C. can be overestimated　　D. can overestimate

Ⅶ. Each of the following sentences has 4 underlined parts marked A, B, C and D. Identify the part of the sentence that is incorrect.

1. Most (A) tree frogs change (B) color to harmonize with (C) its (D) background.

2. In every (A) society there are norms that say (B) individuals how (C) they are supposed (D) to behave.

3. Robert has sat at the table for a couple of (A) hours and drank (B) considerably more wine (C) than what (D) is good for his health.

4. Amy must have called (A) her father yesterday, but she arrived (B) home too (C) late to (D) call him.

5. One of the requirements for (A) a fire is (B) that the material is heated (C) to (D) its burning temperature.

6. Don't (A) come tonight; I'd rather (B) that you will come (C) next (D) weekend.

7. To the citizens (A) of the United States, the bald eagle, America's national (B) bird symbolize (C) strength and freedom (D).

8. The St. Lawrence Seaway, which $\frac{\text{runs between}}{A}$ British Columbia and New York, $\frac{\text{has}}{B}$ completed $\frac{\text{by}}{C}$ the United States and Canada $\frac{\text{in}}{D}$ 1959.

9. More than one $\frac{\text{man}}{A}$ here $\frac{\text{have}}{B}$ been infected $\frac{\text{with}}{C}$ $\frac{\text{the disease}}{D}$.

10. The teacher $\frac{\text{had}}{A}$ his students $\frac{\text{to memorize}}{B}$ the $\frac{\text{dialogue}}{C}$, $\frac{\text{didn't he}}{D}$?

Ⅷ. For each numbered blank in the following passage, there are 4 choices marked A, B, C and D. Choose the best one.

The key to any culture is its language, and the young captives were quick to learn the Indian dialects of their new families. Their __1__ memories and __2__ for imitation made them ready students, while the Indian languages, at once oral, __3__ and poetic, lightened the __4__. In __5__ than 6 moths, the 10-year-old Spencer had "__6__ a sufficient __7__ of the Inian language to understand all ordinary __8__ and ,indeed, the greater part of all __9__ I heard (accompanied, as their conversation and speeches were, with the most __10__ gestures), __11__ enabled him to listen with much __12__ and sometimes with deep interest" __13__ his Indian mother __14__ of battles, heros, and history in the long winter evenings. When Jemina Howe was allowed to visit her 4-year-old son at a neighboring Indian village in Canada, he __15__ her in the Indian tongue with "Mother, are you coming ?" He too had been a captive for only six months.

1.	A)great	B)natural	C)retaining	D)tremendous
2.	A)intelligence	B)instinct	C)distinct	D)capacity
3.	A)specific	B)concrete	C)discovered	D)spoken
4.	A) duty	B)assignment	C)knowledge	D)task
5.	A)more	B)less	C)rather	D)other
6.	A)inquired	B)boasted	C)acquired	D)declined
7.	A)learning	B)knowledge	C)things	D)decline
8.	A)conversation	B)conversion	C)discourse	D)words
9.	A)which	B)what	C)that	D)then
10.	A)advancing	B)magnificent	C)splendid	D)significant
11.	A)that	B)which	C)all	D)what
12.	A)pleasantry	B)pleasure	C)enjoyment	D)dialect
13.	A)to	B)upon	C)when	D)and
14.	A)talk	B)say	C)tell	D)teach
15.	A)told	B)greeted	C)communicated	D)awaited

Reading Material

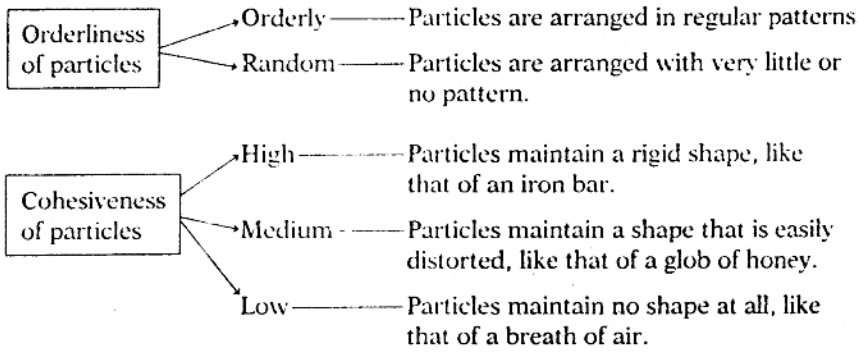
THE STAES OF MATTER

In Chapter 1, a homogeneous substance was characterized as one that is uniform throughout. This section deals with the aspects of molecular arrangements in a homogeneous substance that determine its physical form. Two factors are most significant:

▲the degree to which molecules are orderly in their positions in space, and

▲the degree to which they stick together (cohere).

We can obtain a simple but adequate classification scheme by defining two degrees of orderliness and three degrees of cohesiveness:



This classification would give us six states of matter, as shown in Table 2. The more usual classification is based only on the degrees of cohesiveness among molecules and gives three states: gas, liquid, and solid. That familiar system groups crystalline and noncrystalline solids (states 3 and 6 of Table 2) together, and does not account for "liquid crystals" (state 5). No system, however, adequately classifies all forms of matter. Thus, many substances usually regarded as noncrystalline or amorphous—such as rubber, plastics, and textiles—are composed of large molecules whose arrangements are not completely random. Consequently, such materials have definite and measurable degrees of crystallinity.

In everyday language, the word fluid often means "liquid." A fluid substance, however, is one that flows readily. Therefore, in the scientific sense, fluids include both liquids and gases.

The various states of matter are generally interconvertible. It will be helpful to you through the remainder of this course to learn the vocabulary of changes of state now. They are illustrated in Figure 2. Some of the words in the illustration are used more frequently than others. For now, become familiar with these: