

## Bài luyện: Thông tin chi tiết

### Lake Baikal

Crescent-shaped Lake Baikal, in Siberia, is only the ninth largest lake in area at 385 miles (620 km) in length and 46 miles (74 km) in width, yet it is easily the largest body of fresh water in the world. It holds one-fifth of the world's total fresh water, which is more than the total of all the water in the five Great Lakes; it holds so much fresh water in spite of its less-than-impressive area because it is by far the world's deepest lake. The average depth of the lake is 1,312 feet (400 meters) below sea level, and the Olkhon Crevice, the lowest known point, is more than 5,250 feet (1,600 meters) deep. Lake Baikal, which today is located near the center of the Asian peninsula, is most likely the world's oldest lake. It began forming 25 million years ago as Asia started splitting apart in a series of great faults. The Baikal Valley dropped away, eventually filling with water and creating the deepest of the world's lakes

1. What is stated in paragraph 1 about the shape of Lake Baikal?

- A. It is wider than it is long.
- B. It is circular in shape.
- C. Its width is one-half of its length.
- D. It is shaped like a new moon.

2. It is indicated in paragraph 1 that the area of Lake Baikal

- A. is less than the area of eight other lakes
- B. is one-ninth the area of Siberia

C. is greater than the area of any other freshwater lake

D. is equal to the area of the five Great Lakes

3. According to paragraph 1, Lake Baikal

A. holds one-fifth of the world's water

B. holds five times the water of the Great Lakes

C. holds one-ninth of the world's water

D. holds 20 percent of the world's fresh water

4. According to paragraph 1, the Olkhon Crevice is

A. outside of Lake Baikal

B. 400 meters below sea level

C. the deepest part of Lake Baikal

D. 5,000 meters deep

5. It is mentioned in paragraph 2 that Lake Baikal

A. is not as old as some other lakes

B. formed when sections of the Earth were moving away from each other

C. was fully formed 25 million years ago

D. is today located on the edge of the Asian peninsula

1	2	3	4	5
D	A	D	C	B

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## The Postage stamp

The postage stamp has been around for only a relatively short period of time. The use of stamps for postage was first proposed in England in 1837, when Sir Rowland Hill published a pamphlet entitled “Post Office Reform: Its Importance and Practicability” to put forth the ideas that postal rates should not be based on the distance that a letter or package travels but should instead be based on the weight of the letter or package and that fees for postal Services should be collected in advance of the delivery, rather than after, through the use of postage stamps. The ideas proposed by Hill went into effect in England almost immediately, and other countries soon followed suit. The first English stamp, which featured a portrait of then Queen Victoria, was printed in 1840. This stamp, the “penny black,” came in sheets that needed to be separated with scissors and provided enough postage for a letter weighing 14 grams or less to any destination. In 1843, Brazil was the next nation to produce national postage stamps, and various areas in what is today Switzerland also produced postage stamps later in the same year. Postage stamps in five- and ten-cent denominations were first approved by the U.S. Congress in 1847, and by 1860 postage stamps were being issued in more than 90 governmental jurisdictions worldwide.

6. According to paragraph 1, postage stamps were first suggested

A. in the first half of the eighteenth century

B. in the second half of the eighteenth century

C. in the first half of the nineteenth century

D. in the second half of the nineteenth century

7. It is indicated in paragraph 1 that Sir Rowland Hill believed that postage fees

A. should be paid by the sender

B. should be related to distance

C. should have nothing to do with how heavy a package is

D. should be collected after the package is delivered

8. What is stated in paragraph 2 about the first English postage stamp?

A. It was designed by Queen Victoria.

B. It contained a drawing of a black penny.

C. It was produced in sheets of 14 stamps.

D. It could be used to send a lightweight letter.

9. According to paragraph 2, Brazil introduced postage stamps

A. before England

B. before Switzerland

C. after the United States

D. after Switzerland

10. It is mentioned in paragraph 2 that in 1847

A. postage stamps were in use in 90 different countries

B. it cost fifteen cents to mail a letter in the United States

C. two different denominations of postage stamps were introduced in the United States

D. the U.S. Congress introduced the “penny black” stamp

6	7	8	9	10
C	A	D	B	C

### The Clovis Culture

Archeologists have found sites all over North America that contain similar tools dating from a period about 12,000 years ago. The culture that developed these tools has been named Clovis after the site near Clovis, New Mexico, where the first tools of this sort were discovered in 1932. The tools are quite sophisticated and are unlike any tools that have been found in the Old World. In the years since the first tools of this sort were discovered in New Mexico, archeologists have discovered Clovis tools in areas ranging from Mexico to Montana in the United States and Nova Scotia in Canada. All of the Clovis finds date from approximately the same period, a fact which suggests that the Clovis spread rapidly throughout the North American continent. From the evidence that has been discovered, archeologists have concluded that the Clovis were a mobile culture. They traveled in groups of 40 to 50 individuals, migrating seasonally and returning to the same hunting camps each year. Their population increased

rapidly as they spread out over the continent, and they were quite possibly motivated to develop their sophisticated hunting tools to feed their rapidly expanding populace.

11. What is stated in paragraph 1 about Clovis tools?

- A. They date from around 10,000 B.C.
  - B. They have been in use for 12,000 years.
  - C. They have been found at only one location.
  - D. They were discovered by archeologists hundreds of years ago.
12. According to paragraph 1, the town of Clovis

- A. is in Mexico
  - B. was founded in 1932
  - C. is where all members of the Clovis culture lived
  - D. is where the first remnants of an ancient culture were found
13. It is indicated in paragraph 1 that the tools found near Clovis, New Mexico, were

- A. very rudimentary
- B. similar to others found prior to 1932
- C. rather advanced
- D. similar to some found in Africa and Europe

14. According to paragraph 2, what conclusion have archeologists drawn from the Clovis finds?

- A. That the Clovis tended to remain in one place
- B. That the Clovis expanded relatively quickly
- C. That the Clovis lived throughout the world
- D. That the Clovis were a seafaring culture

15. It is mentioned in paragraph 3 that it is believed that the Clovis

- A. lived in familial groups of four or five people
- B. had a relatively stable population
- C. lived only in New Mexico
- D. spent summers and winters in different places

11	12	13	14	15
A	D	C	B	D

## Brown Dwarfs

A brown dwarf is a celestial body that has never quite become a star. A typical brown dwarf has a mass that is 8 percent or less than that of the Sun. The mass of a brown dwarf is too small to generate the internal temperatures capable of igniting the nuclear burning of hydrogen to release energy and light. A brown dwarf contracts at a steady rate, and after it has contracted as much as possible, a process that takes about 1 million years, it begins to cool off. Its emission of light diminishes with the decrease in its internal temperature, and after a period of 2 to 3 billion years, its emission of light is so weak that it can be difficult to observe from Earth.

Because of these characteristics of a brown dwarf, it can be easily distinguished from stars in different stages of formation. A brown dwarf is quite distinctive because its surface temperature is relatively cool and because its internal composition - approximately 75 percent hydrogen - has remained essentially the same as it was when first formed. A white dwarf, in contrast, has gone through a long period when it burns hydrogen, followed by another long period in which it burns the helium created by the burning of hydrogen and ends up with a core that consists mostly of oxygen and carbon with a thin layer of hydrogen surrounding the core. It is not always as easy, however, to distinguish brown dwarfs from large planets. Though planets are not formed in the same way as brown dwarfs, they may in their current state have some of the same characteristics as a brown dwarf. The planet Jupiter, for example, is the largest planet in our solar system with a mass 317 times that of our planet and resembles a brown dwarf in that it radiates energy based on its internal energy. It is the mechanism by which they were formed that distinguishes a high-mass planet such as Jupiter from a low-mass brown dwarf.



16. It is stated in the passage that the mass of an average brown dwarf

- A. is smaller than the mass of the Sun
  - B. generates an extremely high internal temperature
  - C. is capable of igniting nuclear burning
  - D. causes the release of considerable energy and light
17. According to paragraph 2, a brown dwarf cools off

- A. within the first million years of its existence
- B. after its contraction is complete
- C. at the same time that it contracts
- D. in order to begin contracting

18. What is stated in paragraph 2 about a brown dwarf that has cooled off for several million years?

- A. Its weak light makes it difficult to see from Earth.
- B. It no longer emits light.
- C. Its weak light has begun the process of restrengthening.
- D. Scientists are unable to study it.

19. It is indicated in paragraph 3 that

- A. the amount of hydrogen in a brown dwarf has increased dramatically
- B. a brown dwarf had far more hydrogen when it first formed
- C. three-quarters of the core of a brown dwarf is hydrogen
- D. the internal composition of a brown dwarf is always changing

20. According to paragraph 3, a white dwarf

- A. is approximately 75 percent hydrogen
- B. still burns a considerable amount of hydrogen
- C. creates hydrogen from helium
- D. no longer has a predominantly hydrogen core

21. What is mentioned in paragraph 4 about brown dwarfs?

- A. They are quite different from large planets.
- B. They are formed in the same way as » large planets.
- C. They can share some similarities with large planets.
- D. They have nothing in common with large planets.

22. It is indicated in paragraph 4 that Jupiter

- A. radiates far less energy than a brown dwarf
- B. is a brown dwarf

C. formed in the same way as a brown dwarf

D. is in at least one respect similar to a brown dwarf

16	17	18	19	20	21	22
A	B	A	C	D	C	D

### Flatfish

Members of the flatfish family, sand dabs and flounders, have an evolutionary advantage over many colourfully decorated ocean neighbors in that they are able to adapt their body coloration to different environments. These aquatic chameleons have flattened bodies that are well-suited to life along the ocean floor in the shallower areas of the continental shelf that they inhabit. They also have remarkably sensitive color vision that registers the subtlest gradations on the sea bottom and in the sea life around them. Information about the coloration of the environment is carried through the nervous system to chromatophores, which are pigment-carrying skin cells. These chromatophores are able to accurately reproduce not only the colors but also the texture of the ocean floor. Each time that a sand dab or flounder finds itself in a new environment, the pattern on the body of the fish adapts to fit in with the color and texture around it.

1. It is NOT stated in the passage that sand dabs

A. are a type of flatfish

B. are in the same family as flounders

C. have evolved

D. are colourfully decorated

2. According to the passages, it is NOT true that sand dabs and flounders

A. have flattened bodies

B. live along the ocean floor

C. live in the deepest part of the ocean

D. live along the continental shelf

3. All of the following are stated about the Vision of sand dabs and flounders EXCEPT that they are

A. overly sensitive to light

B. able to see colors

C. able to see the sea bottom

D. aware of their surroundings

4. It is NOT true that chromatophores

A. are skin cells

B. carry pigment

C. adapt to surrounding colors

D. change the ocean floor

5. It is NOT mentioned in the passage that sand dabs and flounders

- A. move to new environments
- B. adapt their behavior
- C. can change color
- D. adapt to textures around them

1	2	3	4	5
D	C	A	D	B

### Limestone Caves

Limestone caves can be spectacular structures tilled with giant stalactites and stalagmites. These caves are formed when rainwater, which is a weak acid, dissolves calcite, or lime, out of limestone. Over time, the lime-laden water drips down into cracks, enlarging them into caves. Some of the lime is then redeposited to form stalactites and stalagmites. Stalactites, which grow down from cave ceilings, are formed in limestone caves when groundwater containing dissolved lime drips from the roof of the cave and leaves a thin deposit as it evaporates. Stalactites generally grow only a fraction of an inch each year, but over time a considerable number may grow to be several yards long. In cases where the supply of water is seasonal, they may actually have growth rings resembling those on tree trunks that indicate how old the stalactites are. Stalagmites are formed on the floor of a limestone cave where

water containing dissolved lime has dripped either from the cave ceiling or from a stalactite above. They develop in the same way as stalactites, when water containing dissolved limestone evaporates. In some limestone caves with mature limestone development, stalactites and stalagmites grow together, creating limestone pillars that stretch from the cave floor to the cave ceiling.

6. It is indicated in paragraph 1 that all of the following are part of the process of forming limestone caves EXCEPT that

- A. rainwater dissolves lime from limestone
- B. the lime-tilled water seeps into breaks in the ground
- C. the lime in the water evaporates
- D. the cracks in the ground develop into caves

7. According to paragraph 2, it is NOT true that stalactites

- A. enlarge cave ceilings
- B. are found in limestone caves
- C. grow in a downward direction
- D. grow quite slowly

8. It is NOT mentioned in paragraph 2

- ☐ A. how long stalactites may grow



B. how the age of a stalactite is determined

C. what one of the effects of a limited water supply

is D. what causes stalactites to disappear

9. According to paragraph 3, stalagmites are NOT formed

A. on cave floors

B. from lime dissolved in water

C. © above stalactites

D. as water containing lime evaporates

10. It is NOT indicated in paragraph 3 that limestone pillars

A. result when a stalactite and a stalagmite grow together

B. are attached to both the floor and the ceiling of a cave

C. are relatively aged limestone formations

D. are more durable than stalactites and stalagmites

6	7	8	9	10
C	A	D	C	D

## Wrigley's Chewing Gum

Wrigley's chewing gum was actually developed as a premium to be given away with other Products rather than as a primary product for sale. As a teenager, William Wrigley Jr. was working for his father in Chicago selling soap that had been manufactured in his father's factory. The soap was not very popular with merchants because it was priced at five cents, and this selling price did not leave a good profit margin for the merchants. Wrigley convinced his father to raise the price to ten cents and to give away cheap umbrellas as a premium for the merchants. This worked successfully, confirming to Wrigley that the use of premiums was an effective sales tool. Wrigley then established his own company; in his company he was selling soap as a wholesaler, giving baking soda away as a premium, and using a cookbook to promote each deal. Over time, the baking soda and cookbook became more popular than the soap, so Wrigley began a new operation selling baking soda. He began hunting for a new premium item to give away with sales of baking soda; he soon decided on chewing gum. Once again, when Wrigley realized that demand for the premium was stronger than the demand for the original product, he created the Wm. Wrigley Jr. Company to produce and sell chewing gum. Wrigley started out with two brands of gum, Vassar and Lotta Gum, and soon introduced Juicy Fruit and Spearmint. The latter two brands grew in popularity, while the first two were phased out. Juicy Fruit and Spearmint are two of Wrigley's main brands to this day.

11. It is NOT indicated in paragraph 1 that young William was working



A. in Chicago

B. for his father

C. as a soap salesman

D. in his father's factory

12. According to paragraph 1, it is NOT true that the soap that young Wrigley was selling

A. was originally well-liked

B. was originally priced at five cents

C. originally provided little profit for merchants

D. eventually became more popular with merchants

13. According to paragraph 2, it is NOT true that, when Wrigley first founded his own company, he was

A. selling soap

B. selling chewing gum

C. giving away cookbooks

D. using baking soda as a premium

14. It is NOT mentioned in paragraph 2 that Wrigley later

A. sold baking soda

B. used chewing gun as a premium to sell baking soda

C. sold chewing gum

D. used baking soda as a premium to sell chewing gum

15. According to paragraph 3, the Wm. Wrigley Jr. Company did all of the following EXCEPT

A. begin with two brands of gum

B. add new brands to the original two

C. phase out the last two brands

D. phase out the first two brands

11	12	13	14	15
D	A	B	D	C

### **Dissociative Identity Disorder**

Dissociative identity disorder is a psychological condition in which a person's identity dissociates, or fragments, thereby creating distinct independent identities within one individual. Each separate personality can be distinct from the other personalities in a number of ways, including posture, manner of moving, tone and pitch of voice, gestures, facial expressions, and use of language. A person suffering from dissociative identity disorder may have a large number of independent personalities or perhaps only two or three.

Two stories of actual women suffering from dissociative identity disorder have been extensively recounted in books and films that

are familiar to the public. One of them is the story of a woman with 22 separate personalities known as Eve. In the 1950s, a book by Corbett Thigpen and a motion picture starring Joanne Woodward, each of which was titled *The Three Faces of Eve*, presented her story; the title referred to 3 faces, when the woman known as Eve actually experienced 22 different personalities, because only 3 of the personalities could exist at one time. Two decades later, Carolyn Sizemore, Eve's 22nd personality, wrote about her experiences in a book entitled *I'm Eve*. The second well-known story of a woman suffering from dissociative personality disorder is the story of Sybil, a woman whose 16 distinct personalities emerged over a period of 40 years. A book describing Sybil's experiences was written by Flora Rheta Schreiber and was published in 1973; a motion picture based on the book and starring Sally Field followed.

16. It is NOT stated in paragraph 1 that someone suffering from dissociative identity disorder has

- A. a psychological condition
- B. a fragmented identity
- C. a number of independent identities
- D. some violent and some nonviolent identities

17. It is indicated in paragraph 1 that distinct personalities can differ in all of the following ways EXCEPT

- A. manner of dressing
- B. manner of moving

C. manner of speaking

D. manner of gesturing

18. It is indicated in paragraph 2 that it is NOT true that Eve

A. suffered from dissociative identity disorder

B. starred in the movie about her life

C. had 22 distinct personalities

D. had only 3 distinct personalities at any one time

19. It is NOT stated in paragraph 2 that *The Three Faces of Eve*

A. was based on the life of a real woman

B. was the title of a book

C. was the title of a movie

D. was made into a movie in 1950

20. All of the following are mentioned in paragraph 2 about Carolyn Sizemore EXCEPT that she

A. wrote I'm Eve

B. was one of Eve's personalities

C. wrote a book in the 1970s

D. was familiar with all 22 personalities

21. According to paragraph 2, it is NOT true that Sybil

- A. was a real person
- B. suffered from dissociative identity disorder
- C. developed all her personalities over 16 years
- D. developed 16 distinctive personalities over a long period of time
22. It is NOT indicated in paragraph 2 that the book describing Sybil's experiences
- A. took 40 years to write
- B. was written by Flora Rheta Schreiber
- C. appeared in the 1970s
- D. was made into a movie

16	17	18	19	20	21	22
D	A	B	D	D	C	A

### Hermit crabs

Hermit crabs occupy the empty shells of dead sea snails for protection while still retaining their mobility. They are capable of discriminating among a selection of shells of various sizes and species, and they choose the one that fits the body most closely. Hermit crabs change shells as they grow, although in some marine environments a large enough variety of shells may not be available and the hermit crab may be forced to occupy a smaller-than-ideal

“house.” When a Shell becomes too small for the hermit crab to occupy, it will sometimes become aggressive and fight other hermit crabs to gain a larger shell.

Hermit crabs may encounter empty shells in the course of their daily activity, but the vacant Shell is usually spotted by sight. The hermit crab’s visual response increases with the size of an object and its contrast against the background. The hermit crab then seizes the Shell with its walking legs and climbs on it, monitoring its size. If the size is right, the crab investigates its shape and texture by rolling it over between its walking legs and running its claws over the surface. Once the shell’s opening has been located, the crab uses its claws to remove any foreign material before preparing to enter. The crab rises above the opening, flexes its abdomen, and enters the shell backward. The shell interior is monitored by the abdomen as the crab repeatedly enters and withdraws. When completely satisfied with its new mobile home, the hermit crab will emerge one last time, turn the shell over and make a final entrance.

45. According to the passage, hermit crabs occupy vacant shells for

A. mobility

B. flexibility

C. protection

D. discrimination

46. According to the passage, a hermit crab changes shells when it

A. outgrows the one it has

B. hunts for food

C. becomes aggressive

D. locates any vacant Shell

47. According to the passage, the way in which hermit crabs locate empty shells is through which of the following senses?

A. Hearing

B. Touch

C. Taste

D. Sight

48. What does a crab NOT investigate a vacant shell for?

A. size

B. type

C. shape

D. texture

49. According to the passage, a hermit crab enters a new shell

A. head first

B. claws first

C. backward

D. with its walking legs

50. According to the passage, a hermit crab settles into its new “mobile home”

A. after entering and leaving several times

B. without inspecting the interior first

C. immediately after locating the shell opening

D. after fighting other hermit crabs for a larger shell

45	46	47	48	49	50
C	A	D	B	C	A

### African-Americans

The first black literature in America was not written but was preserved in an oral tradition, in a rich body of folklore, songs and stories, many from African origins. There are humorous tales, Biblical stories, animal stories, and stories of natural phenomena, of good and bad people, and of the wise and foolish. Many reflect how African-Americans viewed themselves and their lives. The lyrics of blues, spirituals, and work songs speak of suffering and hope, joy and pain, loved ones, and religious faith, and are an integral part of the early literature of black people in America.

The earliest existing written black literature was Lucy Terry's poem "Bars Fight," written in 1746. Other 18th-century black poets



include Jupiter Hammon and George Moses Horton. The first African-American to publish a book in America was Phillis Wheatley. Black poetry also flourished in the 19th century, during which the writings of almost 40 poets were printed, the most notable of whom was Paul Laurence Dunbar, the first black American to achieve national acclaim for his work. Dunbar published eight volumes of poetry and eight novels and collections of stories.

More than three dozen novels were written by blacks between 1853 and 1899, but autobiography dominated African-American literature in the 19th century, as it had in the 18th. In the 20th century, however, fiction has presided, with Charles w. Chestnutt, America's first black man of letters, successfully bridging the two centuries. He began publishing short fiction in the mid-1880s, wrote two books that appeared in 1899, and had three books published between 1900 and 1905. He was a Pioneer of the "new literature" of the early 1900s, which aimed to persuade readers of the worth and equality of African-Americans.

51. Which of the following is NOT mentioned in the passage as part of the oral tradition of African-Americans?

- A. Humorous tales
- B. Tales of adventure
- C. Biblical stories
- D. Animal stories

52. According to the passage, the lyrics of blues and spirituals are often concerned with

- A. the pain and joy in life
- B. loved ones and animals
- C. religion and nature
- D. wise and foolish people

53. According to the passage, an important part of early African-American literature was

- A. novels
- B. short fiction stories
- C. biographies
- D. songs

54. According to the passage, when did the first written African-American literature appear?

- A. In the 1600S
- B. In the 1700s
- C. In the 1800S
- D. In the 1900s

55. According to the passage, who was the first African-American to receive national recognition for his writing?

- A. Paul Dunbar

B. George Horton

C. Lucy Terry

D. Phillis Wheatley

56. According to the passage, what form dominated African-American literature in the 19th century?

A. Poetry

B. Novels

C. Autobiography

D. Fiction

57. According to the passage, Charles w. Chestnutt was one the first writers to

A. write about the suffering of African- Americans

B. publish short fiction in the early 1900S.

C. write persuasively about the worth of African Americans

D. dominate the African-American literary tradition

51	52	53	54	55	56	57
B	A	D	B	A	C	C

## Snowflake

A snowflake originates from countless water molecules that initially come together in small groups as a result of a weak attractive force between oxygen and hydrogen atoms. The same forces subsequently organize the groups into a frozen molecular crystal, a perfectly organized lattice of molecules. Finally, several molecular crystals join to form a snowflake. Scientists have realized for some time that the forces that assemble molecules into natural crystals can be utilized to produce a variety of important materials. They have determined the structure of more than 90,000 different molecular crystals, the most common examples of which are aspirin and mothballs.

In recent years, researchers have studied how molecules organize themselves to form crystals in the hope of better understanding what types of molecules and what conditions will produce molecular crystals with unusual and useful properties. Scientists are aware that the material properties of a crystal depend in large part on the organization of the molecules in the crystal, yet they know little about the factors controlling the assembly of such crystals.

Synthesizing a molecular crystal is similar to designing a building. Before construction can begin, the architect must specify the shapes and sizes of the girders and the number and placement of the rivets. Similarly, to produce new molecular crystals, chemists must choose molecules of the appropriate sizes and shapes and select the molecular forces that will hold the crystals together. A

chemist can normally find many molecules of various shapes and sizes, but the challenge is to find ones that assemble in a predictable manner.

58. According to the passage, a snowflake is formed by

- A. the attractive force between oxygen and hydrogen
- B. molecular crystals with new and useful properties
- C. the synthesizing of molecular crystals
- D. the joining of several molecular crystals

59. According to the passage, water molecules join together as a result of

- A. an attraction between oxygen and hydrogen atoms
- B. the organization of the molecules in a crystal
- C. a strong force that assembles crystal atoms
- D. the unusual and useful properties of molecular crystals

60. By making use of forces that assemble molecules into natural crystals, scientists can

- A. find molecules of various shapes and sizes

B. determine the structure of different molecular crystals

C. organize molecules into a perfect lattice

D. create new and useful materials

61. According to the passage, what reason do researchers have for studying how molecules organize themselves to form crystals?

A. To assemble molecules into natural crystals

B. To learn how to synthesize molecular crystals

C. To make aspirin and mothballs

D. To change the material properties of a crystal

62. According to the passage, what do scientists still need to learn about the organization of molecules?

A. What determines the material property of a crystal

B. The molecular forces that hold molecules together

C. The conditions that produce molecular crystals

D. The factors controlling the way crystals are assembled

63. To produce new molecular crystals, there is one thing chemists must NOT choose

A. molecules of the right size

B. molecules of the appropriate shape

C. the right molecular organization

D. the proper molecular forces

64. According to the passage, the task of synthesizing a molecular crystal can be compared to

A. designing a building

B. building a house

C. making materials

D. constructing a lattice

58	59	60	61	62	63	64
A	D	D	B	D	C	A

## Education

Education was of primary importance to the English colonists and was conducted at home as well as in established schools. Regardless of geographic location or finances, most Americans learned to read and compute numbers. For many, the Bible and other religious tracts were their only books; however, the excellent language contained in such works usually made them good primers. Many families owned one or more of Shakespeare's works, a copy of John Bunyan's classic *A Pilgrim's Progress*, and sometimes collections of English literary essays, poems, or historical speeches.

In 1647 the Massachusetts School Law required every town of at least 50 households to maintain a grammar school. The law was the first to mandate public education in America. In the middle colonies at the time, schools were often dependent on religious societies, such as the Quakers and other private organizations. In the South, families employed private tutors or relied on the clergy to conduct education. At the outset, most elementary schools were for boys, but schools for girls were established in the eighteenth century in most cities and large towns. In spite of the informal atmosphere of most American schools, the literacy rate in the colonies of mid-eighteenth century America was equal to or higher than that in most European countries.

Before the American Revolution, nine colleges had been founded, including Harvard, William and Mary, Yale, the College of New Jersey (now Princeton), Brown, Rutgers, Dartmouth, and Kings College (later Columbia University). By 1720 the natural Sciences and modern languages were being taught, as well as courses in practical subjects such as mechanics and agriculture. At the end of the 18th century, medical schools were established at the College of Philadelphia and at King's College.

65. Which of the following words best describes the English colonists' attitude toward education?

- A. Indifferent
- B. Distrustful
- C. Enthusiastic
- D. Casual

66. According to the passage, most Americans learned how to



A. write

B. read

C. farm

D. speak a foreign language

67. According to the passage, which of the following is NOT sometimes substituted for school books?

A. historical speeches

B. works of Shakespeare

C. literary essays

D. Biographies

68. According to the passage, the Massachusetts School Law applied to every town with how many households?

A. Less than 50

B. Exactly 50

C. Fifty or more

D. Fifteen

69. According to the passage, the middle colonies often depended upon which group to provide education?

A. Private organizations

B. Colleges

C. Established primary schools

D. Businesses

70. According to the passage, who often conducted education in the South?

A. Public school teachers

B. Doctors

C. Clergy

D. Politician

71. How well educated were Americans in comparison to most European countries?

A. Much worse

B. The same or better

C. Far better

D. Less or equal

72. According to the passage, which subject was NOT taught in colleges in the 1700s

A. languages

B. Science

C. medicine

D. economics

65	66	67	68	69	70	71	72
C	B	D	C	A	C	B	D

### Cybernetics

The study of control processes in electronic, mechanical, and biological Systems is known as cybernetics. The word was coined in 1948 by the American mathematician Norbert Wiener from the Greek word meaning pilot or steersman. Cybernetics is concerned with the analysis of the flow of information in both living organisms and machines, but it is particularly concerned with Systems that are capable of regulating their own operations without human control.

Automatic regulation is accomplished by using information about the State of the end product that is fed back to the regulating device, causing it to modify Or correct production procedures if necessary. The concept of feedback is at the very heart of cybernetics and is what makes a system automatic and self-regulating. A simple example of a self-regulating machine is a thermostat, which reacts to continual feedback about the outside temperature and responds accordingly to achieve the temperature that has been programmed into it.

The applications of cybernetics are wide reaching, appearing in Science, engineering, technology, sociology, economics,

education, and medicine. Computers can keep a patient alive during a surgical operation, making instantaneous modifications based on a constant flow of information. In education, teaching machines use cybernetic principles to instruct students on an individual basis. In the home, automation is present in such everyday products as refrigerators, coffee makers, and dishwashers. In industry, automation is increasing its applications, although it is currently applied primarily to the large-scale production of single units. In industries in which a break in the flow of production can ruin the product, automatic controls are invaluable. Chemical and Petroleum plants are now almost completely automatic, as are industries involved in the production of chemicals and atomic energy. Automation has become the answer when human safety is the number one priority.

73. Which system is NOT is the study of control processes of cybernetics?

- A. ecological
- B. biological
- C. mechanical
- D. electronic

74. According to the passage, the word “cybernetics” was coined from the Greek word meaning

- A. information
- B. automatic
- C. pilot

D. regulator

75. According to the passage, cybernetics is primarily concerned with systems that

A. are controlled by humans

B. analyze flaws of information

C. are self-regulating

D. have wide-reaching applications

76. According to the passage, how is automatic regulation accomplished?

A. By modifying and correcting production procedures

B. By feeding information to the regulatory device

C. By analyzing the flow of information to the organism

D. By making modifications in cybernetic principles

77. According to the passage, what makes a system automatic and self-regulating?

A. Information

B. Production procedures

C. Human control

D. Feedback

78. Which of the following is NOT mentioned as an area in which cybernetics has applications?

- A. Technology
- B. Engineering
- C. Philosophy
- D. Education

79. According to the passage, automation in industry is primarily used in producing

- A. large quantities of a single unit
- B. everyday household Products
- C. small amounts of many different Products
- D. high tech surgical instruments

80. According to the passage, automation is extremely important when the top priority is

- A. efficiency
- B. speed
- C. convenience
- D. safety

73	74	75	76	77	78	79	80
A	C	C	B	D	C	A	D

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