

Passage 1

Each advance in microscopic technique has provided scientists with new perspective, on the function of living organisms and the nature of matter itself. The invention of the visible-light microscope late in the sixteenth century introduced a previously unknown realm of single-celled plants and animals. In the twentieth century, electron microscopes have provided direct views of viruses and **minuscule** surface structures. Now another type of microscope, one that utilizes X rays rather than light or electrons, offers a different way of examining tiny details; **it** should extend human perception still farther into the natural world.

The dream of building an X-ray microscope dates to 1895; its development, however, was virtually halted in the 1940's because the development of the electron microscope was progressing rapidly. During the 1940's electron microscopes routinely achieved resolution better than that possible with a visible-light microscope, while the performance of X-ray microscopes resisted improvement. In recent years, however, interest in X-ray microscopes has revived, largely because of advances such as the development of new sources of X-ray illumination. As a result, the brightness available today is millions of times that of X-ray tubes, which, for most of the century, were the only available sources of soft X-rays.

The new X-ray microscopes considerably improve on the resolution provided by optical microscopes. They can also be used to map the distribution of certain chemical elements. Some can form pictures in extremely short times; others hold the promise of special capabilities such as three-dimensional imaging. Unlike conventional electron microscopy, X-ray microscopy **enables** specimens to be kept in air and in water, which means that biological samples can be studied under conditions similar to their natural state. The illumination used, so-called soft X rays in the wavelength range of twenty to forty angstroms (an angstrom is one ten-billionth of a meter), is also sufficiently penetrating to image intact biological cells in many cases. Because of the wavelength of the X rays used, soft X-ray microscopes will never match the highest resolution possible with electron microscopes. **Rather**, their special properties will make possible investigations that will complement **those** performed with light- and electron-based instruments.

1. What does the passage mainly discuss?

- A) The detail seen through a microscope
- B) Sources of illumination for microscope
- C) A new kind of microscope
- D) Outdated microscopic techniques

2. According to the passage, the invention of the visible-light microscope allowed scientists to

- A) see viruses directly
- B) develop the electron microscope later on
- C) understand more about the distribution of the chemical elements
- D) discover single-celled plants and animals they had never seen before

3. The word “minuscule” in paragraph 1 is closest in meaning to

- A) circular
- B) dangerous
- C) complex
- D) tiny

4. The word “it” in paragraph 1 refers to

- A) a type of microscope
- B) human perception
- C) the natural world
- D) light

5. Why does the author mention the visible-light microscope in the first paragraph?

- A) To begin a discussion of sixteenth-century discoveries
- B) To put the X-ray microscope in a historical perspective
- C) To show how limited its uses are
- D) To explain how it functioned

6. Why did it take so long to develop the X-ray microscope?

- A) Funds for research were insufficient.
- B) The source of illumination was not bright enough until recently.
- C) Materials used to manufacture X-ray tubes were difficult to obtain.
- D) X-ray microscopes were too complicated to operate.

7. The word “enables” in paragraph 3 is closest in meaning to

- A) constitutes
- B) specifies
- C) expands
- D) allows

8. The word “Rather” in paragraph 3 is closest in meaning to

- A) significantly
- B) preferably
- C) somewhat
- D) instead

9. The word “those” in paragraph 3 refers to

- A) properties
- B) investigations
- C) microscopes
- D) X rays

10. Based on the information in the passage, what can be inferred about X-ray microscopes in the future?

- A) They will probably replace electron microscopes altogether.
- B) They will eventually be much cheaper to produce than they are now.
- C) They will provide information not available from other kinds of microscopes.
- D) They will eventually change the illumination range that they now use.

Passage 2

Smallpox was the first widespread disease ever to be eliminated by human intervention. A highly contagious viral disease, it was endemic in Europe, causing the deaths of millions of people until the development of the vaccination by Edward Jenner around 1800. In many non-European nations, it remained a dreaded, often fatal illness until very recently. Its victims suffered high fever, vomiting, and painful, itchy pustules, pus-filled skin eruptions that left pits or pockmark scars. In villages and cities all over the world, scarred people showed that they had survived smallpox.

In May 1966, the World Health Organization (WHO), an agency of the United Nations, was authorized to initiate a global campaign to eradicate smallpox. The goal was to eliminate the disease in one decade. At the time, the disease posed a serious **threat** to people in thirty nations. More than 700 physicians, nurses, scientists, and other personnel from WHO joined about 200,000 health workers in the infected nations to battle the disease. Because similar projects for malaria and yellow fever had failed, few believed that a disease as widespread as smallpox could actually be eradicated, but eleven years after the initial organization of the anti-smallpox campaign, no cases were reported in the field.

The strategy that developed was to combat the disease at several levels. There was an education campaign, of course, so that the people in the threatened countries could be taught more about how the disease spread and become active participants in the fight against smallpox. Other strategies included not only providing mass vaccinations but also isolating patients with active smallpox in order to contain the spread of the disease, thus breaking the chain of human transmission. Monetary rewards for reporting smallpox assisted in motivating the public to aid health workers. One by one, each smallpox victim was sought out, removed from contact with others, and treated. At the same time, the entire village where the victim had lived was vaccinated.

By April of 1978, WHO officials announced that **they** had **isolated** the last known case of the disease, but health workers continued to search for new cases for two additional years to be completely sure. In May 1980, a formal statement was made to the global community. Today smallpox is no longer a threat to humanity. Routine vaccinations have been stopped worldwide.

1. Which of the following is the best title for the passage?

- A) The World Health Organization
- B) The Eradication of Smallpox
- C) Smallpox Vaccinations
- D) Infectious Diseases

2. The word “threat” in paragraph 2 could best be replaced by

- A) debate
- B) humiliation
- C) risk
- D) bother

3. According to the passage, what was the strategy used to eliminate the spread of smallpox?

- A) Vaccinations of entire villages
- B) Treatment of individual victims
- C) Isolation of victims and mass vaccinations
- D) Extensive reporting of outbreaks

4. The word “They” in paragraph 4 refers to

- A) years
- B) officials
- C) victims
- D) cases

5. The word “isolated” in paragraph 4 is closest in meaning to

- A) restored
- B) separated
- C) attended
- D) located

6. How was the public motivated to help the health workers?

- A) By educating them
- B) By rewarding them for reporting cases
- C) By isolating them from others
- D) By giving them vaccinations

7. Which one of the statements does NOT refer to smallpox?

- A) Previous projects had failed.
- B) People are no longer vaccinated for it.
- C) The World Health Organization mounted a worldwide campaign to eradicate the disease.
- D) It was a serious threat.

8. It can be inferred from the passage that

- A) no new cases of smallpox have been reported this year
- B) malaria and yellow fever have been reported this year
- C) smallpox victims no longer die when they contract the disease
- D) smallpox is not transmitted from one person to another

Passage 3

In 1626, Peter Minuit, governor of the Dutch settlements in North America known as New Amsterdam, negotiated with Canarsee chiefs for the purchase of Manhattan Island for merchandise valued at sixty guilders or about \$24.12. He purchased the island for the Dutch West India Company.

The next year, Fort Amsterdam was built by the company at the extreme southern tip of the island. Because attempts to encourage Dutch immigration were not immediately successful, offers, generous by the standards of the era, were extended throughout Europe. Consequently, the settlement became the most **heterogeneous** of the North American colonies. By 1637, the fort had expanded into the village of New Amsterdam, other small communities had grown up around it, including New Haarlem and Stuyvesant's Bouwery, and New Amsterdam began to prosper, developing characteristics of religious and linguistic tolerance unusual for the times. By 1643, it was reported that eighteen different languages could be heard in New Amsterdam alone.

Among the multilingual settlers was a large group of English colonists from Connecticut and Massachusetts who supported the English King's claim to all of New Netherlands set

out in a charter that gave the territory to his brother James, Duke of York. In 1644, when the English sent a formidable fleet of warships into the New Amsterdam harbor, Dutch governor Peter Stuyvesant surrendered without resistance.

When the English acquired the island, the village of New Amsterdam was renamed New York in honor of the Duke. By the onset of the Revolution, New York City was already a bustling commercial center. After the war, it was selected as the first capital of the United States. Although the government was eventually moved, first to Philadelphia and then to Washington, D.C., New York maintained its status. It became a haven for pirates who conspired with leading merchants to exchange supplies for their ships in return for a share in the plunder. As a colony, New York exchanged many agricultural products for English manufactured goods. In addition, trade with the West Indies prospered. Three centuries after his initial trade with the Native Americans, Minuit's tiny investment was worth more than seven billion dollars.

1. Which of the following would be the best title for this passage?

- A) A History of New York City
- B) An Account of the Dutch Colonies
- C) A Biography of Peter Minuit
- D) The First Capital of the United States

2. What did the Native Americans receive in exchange for their island?

- A) Sixty Dutch guilders
- B) \$24.12 U.S.
- C) Goods and supplies
- D) Land in New Amsterdam

3. Where was New Amsterdam located?

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|-------------------------------|---------------------|
| A) In Holland | B) In North America |
| C) On the island of Manhattan | D) In India |

4. What does the author mean by the statement "Because attempts to encourage Dutch immigration were not immediately successful, offers, generous, by the standards of the era, were extended throughout Europe"?

- A) Other Europeans were given opportunities to immigrate to the new world after a slow response by the Dutch.
- B) Since the Dutch immigration was so successful, opportunities were provided for the Europeans to immigrate to the new world also.
- C) The Dutch took advantage of opportunities to immigrate to Europe instead of to the new world.
- D) Immigration to the new world required that the Dutch and other Europeans wait until opportunities were available.

5. The word "heterogeneous" in paragraph 2 could best be replaced by

- A) liberal
- B) renowned
- C) diverse
- D) prosperous

6. Why were so many languages spoken in New Amsterdam?

- A) The Dutch West India Company was owned by England.
- B) The Dutch West India Company allowed freedom of speech.
- C) The Dutch West India Company recruited settlers from many different Countries in Europe.
- D) The Indians who lived there before the Dutch West India Company purchase spoke many languages.

Passage 4

Perhaps it was his own lack of adequate schooling that inspired Horace Mann to work so hard to accomplish the important reforms in education that he advocated. While he was still a boy, his father and older brother died, and he became responsible for supporting his family. Like most of the children in his town, he attended school only two or three months a year. Later, with the help of several teachers, he was able to study law and become a member of the Massachusetts bar, but he never forgot those early **struggles**.

While serving in the Massachusetts legislature, he signed an historic education bill that set up a state board of education. Without regret, he gave up his successful legal practice and political career to become the first secretary of the board. **There** he exercised an enormous influence during the critical period of reconstruction that brought into existence the American graded elementary school as a substitute for the older district school system. Under his leadership, the curriculum was restructured, the school year was increased to a minimum of six months, and mandatory schooling was extended to age sixteen. Other important reforms that came into existence under Mann's guidance included the establishment of state normal schools for teacher training, institutes for in service teacher education, and lyceums for adult education. He was also instrumental in improving salaries for teachers and creating school libraries.

Mann's ideas about school reform were developed and distributed in the twelve annual reports to the state of Massachusetts that he wrote during his tenure as secretary of education. Considered quite radical at the time, the Massachusetts reforms later served as a model for the nation's educational system. Mann was formally recognized as the father of public education. During his lifetime, Horace Mann worked tirelessly to extend educational opportunities to agrarian families and the children of poor laborers. In one of his last speeches he summed up his philosophy of education and life: "Be ashamed to die until you have won some victory for humanity." Surely, his own life was an example of that philosophy.

1. Which of the following titles would best express the main topic of the passage?

- A) The Father of American Public Education
- B) Philosophy of Education

C) The Massachusetts State Board of Education

D) Politics of Educational Institutions

2. Why does the author mention Horace Mann's early life?

A) As an example of the importance of an early education for success

B) To make the biography more complete

C) Because it served as the inspiration for his later work in education

D) In tribute to the teachers who helped him succeed

3. The word “struggles” in paragraph 1 could best be replaced by

A) valuable experiences

B) happy situations

C) influential people

D) difficult times

4. The word “There” refers to

A) the Massachusetts legislature

B) the state board of education

C) Mann's legal practice

D) his political career

5. With which of the following statements would the author most probably agree?

A) Horace Mann's influence on American education was very great.

B) A small but important influence on American education was exerted by Horace Mann.

C) Few educators fully understood Horace Mann's influence on American education.

D) The influence on American education by Horace Mann was not accepted or appreciated.

Passage 5

The forest from which Man takes his timber is the tallest and most impressive plant community on Earth. In terms of Man's brief life it appears permanent and unchanging, save for the seasonal growth and fall of the leaves, but to the forester it represents the climax of a long succession of events.

No wooded landscape we see today has been forest for all time. Plants have minimum requirements of temperature and moisture and, in ages past, **virtually** every part of Earth's surface has at some time been either too dry or too cold for plants to survive. however, as soon as climatic conditions change in favour of plant life, a fascinating sequence of changes occurs, called a **primary succession**.

First to colonize the barren land are the lowly lichens, surviving on bare rock. Slowly, the acids produced by these organisms crack the rock surface, plant debris accumulates, and mosses establish a shallow root-hold. Ferns may follow and, with short grasses and shrubs, gradually form a covering of plant life. Roots probe even deeper into the developing soil and eventually large shrubs give way to the first trees. These grow rapidly, cutting off sun light from the smaller plants, and soon establish complete domination—closing their ranks and forming a climax community which may endure for thousands of years.

Yet even this **community** is not everlasting. Fire may destroy it outright and settlers may cut it down to gain land for pasture or cultivation. If the land is then abandoned, a **secondary succession** will take over, developing much faster on the more hospitable soil. Shrubs and trees are among the early invaders, their seeds carried by the wind, by birds and lodged in the coats of mammals. For as long as it stands and **thrives**, the forest is a vast machine storing energy and the many elements essential for life.

1- Why does the forest strike mankind as permanent?

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| 1) It is an essential part of our lives. | 2) It is renewed each season. |
| 3) Our lives are short in comparison. | 4) The trees are so tall. |

2- What has sometimes caused plants to die out in the past?

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|--|--------------------------------|
| 1) The introduction of new types of plants | 2) Variations in climate |
| 3) The absence of wooded land | 4) Interference from foresters |

3- In a “primary succession” (line 9), what makes it possible for mosses to take root?

- | | |
|---------------------------|--------------------------|
| 1) The amount of moisture | 2) The type of rock |
| 3) The amount of sunlight | 4) The effect of lichens |

4- What conditions are needed for shrubs to become established?

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|---|---------------------------------|
| 1) The ground must be covered with grass. | 2) Smaller plants must die out. |
| 3) Ferns must take root. | 4) More soil must accumulate. |

5- Why is a “secondary succession” (line 20) quicker?

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|--|-----------------------------------|
| 1) There is more space for new plants. | 2) The ground is more suitable. |
| 3) Birds and animals bring new seeds. | 4) It is supported by the forest. |

6- The word “virtually” (line 6) can best be replaced by

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|-------------|------------|---------------|---------------|
| 1) actually | 2) hastily | 3) abundantly | 4) ultimately |
|-------------|------------|---------------|---------------|

7- By “community” (line 18), the author means

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| 1) a group of people | 2) shrubs | 3) smaller plants | 4) trees |
|----------------------|-----------|-------------------|----------|

8- The word “thrives” (line 22) is closest in meaning to

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|----------------|----------|---------------|-----------|
| 1) needs water | 2) grows | 3) gets older | 4) values |
|----------------|----------|---------------|-----------|

Passage 6

Naturally the young are more inclined to novelty than their elders and it is in their speech, as it always was, that most of the verbal changes originate. But listening critically to their talk I hear hardly any new words. It is all a matter of using old words in a new way and then copying each other, for much as they wish to speak differently from their parents, they want even more to speak like people of their own age. A new usage once took time to spread, but now a pop star can flash it across the world in hours.

Of course, it is not only the young who like to use the latest in-word. While they are describing their idols as smashing, great, lab or cosmic, their parents and the more discriminating of the younger set are also **groping** for words of praise that are at once apt and fashionable. However, their choice of splendid, brilliant, fantastic and so on will in turn be slightly dimmed by over-use and need replacement.

Magic is a theme that has regularly supplied words of praise (and the choice must betray something in our nature). Charming, entrancing and enchanting are all based on it. So also is marvelous, which has been used so much that **some** of its magic has faded while among teenagers, wizard had a great run. Another of this group, though you might not think it, is glamorous, which was all the rage in the great days of Hollywood. Glamour was a Scottish dialect form of "grammar" or "grammarye", which itself was an old word for enchantment. (Grammar means the study of words, and words have always been at the heart of magic.) The change from "r" to "l" may have come about through the association with words like gleaming and glittering.

On the whole, when a new word takes over the old ones remain, weakened but still in use, so that the total stock increases all the time. But some that start only as slang and never rise above that class can disappear completely. "Did you really say ripping when you were young?" my granddaughter asked me. rather like asking if I ever wore a suit of armour. Of course, I did and it was no sillier than smashing, which some of her contemporaries are still saying.

1- What do young people like to do in their speech?

- 1) Give words new meanings to mislead their parents
- 2) Invent words that older people cannot understand
- 3) Use words invented by pop stars
- 4) Copy the speech of their contemporaries

2- Words of praise keep changing because

- 1) older people try to avoid the in-words of the young
- 2) young people are becoming more discriminating
- 3) they lose their freshness
- 4) there are more words available in this area

3- The fact that magic is a frequent source of words of praise suggests that people

- 1) have always been interested in magic
- 2) are interested in magic when young
- 3) lack linguistic originality
- 4) are becoming more superstitious

4- Which of these words does NOT have an association with magic?

- 1) Gleaming
- 2) Grammar
- 3) Marvelous
- 4) Wizard

5- To the author's granddaughter, the word ripping

- 1) seems strange and old-fashioned
- 2) is unacceptable because it is slang
- 3) has a clearer meaning than it does for the author
- 4) means much the same as smashing

6- The word "some" (line 14) refers to

- 1) use
- 2) stock
- 3) time
- 4) words

7- The word “groping” in (line 9) is closest in meaning to

- 1) searching 2) inventing 3) using 4) preferring

Passage 7

From bacteria to baleen whales, our planet is home to tens of millions of different life forms at least; biologists can only guess at the true number of species. The richness and variety of life is referred to as biological diversity, or just biodiversity. In recent years, the subject of biodiversity has been the focus of discussion not only in scientific circles but in the news media and the highest levels of government and international affairs. The reason for this attention, unfortunately, is that the earth’s biodiversity is disappearing. Extinction is a natural event that has gone on since life first appeared on earth, but pollution, habitat destruction, overexploitation, and other human folly are now driving, species extinct at a rate unprecedented in the history of life. At the rate things are going, most kinds of living things will disappear forever from the face of the earth, many before we even know they are there.

when it comes to conservation, the emphasis of decision makers, conservation organizations, and the general public has traditionally been on organisms that we find beautiful or emotionally compelling. Bald eagles, whales, and redwood trees evoke strong positive reactions in most people; microscopic worms and bottom—dwelling fungi do not. Worms, fungi, and millions of other seemingly insignificant species are at least as vital to earth’s survival—and therefore to our own—as are the larger organisms that we happen to find attractive. There is a growing recognition of the need to protect the earth’s biodiversity, to reverse or at least slow the process of mass extinction. What is new about this recent attention is the focus on maintaining the total number of species, rather than on saving particular ones.

1- According to the passage, the variety of life on Earth

- 1) has attracted people’s attention because it is in jeopardy
2) has long been the concern of different people
3) is discussed in scientific circles only
4) is a recent discovery

2- Which one of the following statements about extinction is TRUE, according to the passage?

- 1) It is unlikely to affect mankind if it continues at the present rate.
- 2) It began a long time after life flourished on the planet Earth.
- 3) It used to occur more slowly than it does now.
- 4) It is argued to be a recent phenomenon.

3- It can be inferred from the passage that there are most probably living things

- 1) not contributing to Earth's biodiversity
- 2) not yet known to us
- 3) as conspicuous as trees whose problems of survival go unnoticed
- 4) not sensitive to such factors as pollution, habitat destruction, overexploitation

4- The author states that microscopic worms and bottom-dwelling fungi

- 1) are needed for the health and survival of the Earth
- 2) are viewed as attractive by most people but ignored because of being invisible
- 3) are often ignored due to their insignificance
- 4) occupy more space than other organisms

5- The tone of the passage could best be described as

- 1) laudatory
- 2) flippant
- 3) apologetic
- 4) alarmed