Practice Test 2

READING SECTION

Directions

In this section, you will read three passages and answer reading comprehension questions about each passage. Most questions are worth one point, but the last question in each set is worth more than one point. The directions indicate how many points you may receive.

You have 60 minutes to read all of the passages and answer the questions. Some passages include a word or phrase followed by an asterisk (*). Go to the bottom of the page to see a definition or an explanation of these words or phrases.

Questions 1–12

Two Atomic Clocks

The nucleus of a radioactive atom disintegrates spontaneously and forms an atom of a different element while emitting radiation in the process. The original atom is called the parent isotope* and its stable product is called the daughter or progeny isotope. For example, rubidium-87 decays by emitting an electron from its nucleus to form a stable daughter called strontium-87. Because the rate of nuclear decay is constant regardless of temperature and pressure conditions, radioactive decay provides a dependable way of keeping time. Radioactive isotopes alter from one type of atom to another at a fixed rate from the moment they are created anywhere in the universe. Since we can calculate the decay rate and also count the number of newly formed progeny atoms and the remaining parent atoms, we can use the ratio as a kind of clock to measure the age of minerals and other materials.

The rate at which a radioactive element decays is known as the half-life of the element. This is the time necessary for one-half of the original number of radioactive atoms in a sample to decay into a daughter product. After two half-lives, the number of atoms remaining after the first half-life will have decayed by half again. Thus, the number of remaining parent atoms is reduced geometrically over time. With some elements, the half-life is very long. Rubidium-87, for example, has a half-life that has been estimated at nearly 48.8 billion years, much longer than the current estimated age of the universe. With other elements, this period can be as short as a few days or even minutes. If we know the half-life of a decaying element, it is possible to calculate the ratio of parent to stable progeny that will remain after any given period of time.

Geologists use a sensitive instrument called a mass spectrometer to detect tiny quantities of the isotopes of the parent and progeny atoms. By measuring the ratio of these, they can calculate the age of the rock in which the rubidium originally crystallized. Because the number of progeny is growing as the parent is decaying and this is occurring at a constant rate, after one-half life the ratio is one parent to one progeny. After two half-lives the ratio is 1 to 3.

Rubidium-87 has often been used to date rocks since it is a widespread element. Various elements including rubidium are incorporated into minerals as they crystallize from magma* or metamorphic rock. During this process the rubidium is separated from any strontium progeny that existed before the rock formed and so we know that the measurable alteration from parent to progeny can be dated from this point. As the radioactive decay of rubidium-87 begins, new progeny atoms of strontium-87 start to accumulate in the rock. In the dating of rocks using these elements, it is important that the rock sample has not been altered subsequent to its formation by other geologic processes or contamination of any kind. Rocks as old as 4.6 billion years can be dated with some degree of reliability using this method.

Another radioactive element useful for dating is carbon-14, which decays into nitrogen-14. With a half-life of 5,730 years, carbon-14 decays much more rapidly than rubidium-87 and so is useful for measuring the ages of objects from the recent historical and geologic past, such as fossils, bones, wood, and other organic materials. Whereas rubidium-87 is incorporated into rocks during their formation, carbon-14, which is an essential element of the cells of organisms, becomes incorporated into living tissues as organisms grow. The ratio of carbon-14 to stable carbon isotopes in the organism is the same as it is in the atmosphere. When a living organism dies, no more carbon dioxide is absorbed and so no new carbon isotopes are added. The daughter nitrogen-14 isotope, existing in gaseous form, leaks out of the dead organism, and thus, we cannot use it to compare the ratio of original to daughter as is done with rubidium-87 and its daughter. However, as the amount of carbon-14 in the dead organism becomes less over time, we can compare the proportion of this isotope remaining with the proportion that is in the atmosphere and from this calculate the approximate number

of years since the organism has died. Dating dead organic material by this method is moderately reliable in samples up to about 50,000 years old, but beyond that the accuracy becomes unreliable.

***isotope:** one of the differing forms of an atomic element
***magma:** material that is in liquid form and which cools on the Earth's surface to form rock

1. The word "alter" in the passage is closest in meaning to
   - (A) adapt
   - (B) change
   - (C) revise
   - (D) vary

The nucleus of a radioactive atom disintegrates spontaneously and forms an atom of a different element while emitting radiation in the process. The original atom is called the parent isotope and its stable product is called the daughter or progeny isotope. For example, rubidium-87 decays by emitting an electron from its nucleus to form a stable daughter called strontium-87. Because the rate of nuclear decay is constant regardless of temperature and pressure conditions, radioactive decay provides a dependable way of keeping time. Radioactive isotopes alter from one type of atom to another at a fixed rate from the moment they are created anywhere in the universe. Since we can calculate the decay rate and also count the number of newly formed progeny atoms and the remaining parent atoms, we can use the ratio as a kind of clock to measure the age of minerals and other materials.

2. The rate of nuclear decay in rubidium-87
   - (A) is always the same
   - (B) changes over time
   - (C) depends on temperature
   - (D) depends on temperature and pressure

[Refer to the full passage.]

3. The word "This" in the passage refers to
   - (A) element
   - (B) half-life
   - (C) rate
   - (D) time

The rate at which a radioactive element decays is known as the half-life of the element. This is the time necessary for one-half of the original number of radioactive atoms in a sample to decay into a daughter product. After two half-lives, the number of atoms remaining after the first half-life will have decayed by half again. Thus, the number of remaining parent atoms is reduced geometrically over time. With some elements, the half-life is very long. Rubidium-87, for example, has a half-life that has been estimated at nearly 48.8 billion years, much longer than the current estimated age of the universe. With other elements, this period can be as short as a few days or even minutes. If we know the half-life of a decaying element, it is possible to calculate the ratio of parent to stable progeny that will remain after any given period of time.

4. The half-life of an element
   - (A) is a reliable way of measuring sample size
   - (B) is a measure of decay rate in radioactive elements
   - (C) is considered an unreliable way of calculating age
   - (D) is approximately half the age of the atoms it contains

[Refer to the full passage.]

5. What can be inferred about the reliability of using radioactive atoms to calculate ages of rock samples?
   - (A) The reliability increases over time.
   - (B) The reliability decreases with older samples.
   - (C) The reliability of the parent atom is greater than the progeny.
   - (D) The reliability of the progeny atom is greater than the parent.

[Refer to the full passage.]

6. According to the passage, from what point can we measure the ages of rocks?
   - (A) From the point at which rubidium-87 became part of the rock structure
   - (B) From the point at which strontium-87 started to decay
   - (C) From the point at which the rocks rubidium-87 and strontium-87 joined
   - (D) From the point at which later contamination entered the rock samples

[Refer to the full passage.]

7. The word "essential" in the passage is closest in meaning to

(A) redundant
(B) stable
(C) dependable
(D) vital

Another radioactive element useful for dating is carbon-14, which decays into nitrogen-14. With a half-life of 5,730 years, carbon-14 decays much more rapidly than rubidium-87 and so is useful for measuring the ages of objects from the recent historical and geologic past, such as fossils, bones, wood, and other organic materials. Whereas rubidium-87 is incorporated into rocks during their formation, carbon-14, which is an essential element of the cells of organisms, becomes incorporated into living tissues as organisms grow. The ratio of carbon-14 to stable carbon isotopes in the organism is the same as it is in the atmosphere. When a living organism dies, no more carbon dioxide is absorbed and so no new carbon isotopes are added. The daughter nitrogen-14 isotope, existing in gaseous form, leaks out of the dead organism, and thus, we cannot use it to compare the ratio of original to daughter as is done with rubidium-87 and its daughter. However, as the amount of carbon-14 in the dead organism becomes less over time, we can compare the proportion of this isotope remaining with the proportion that is in the atmosphere and from this calculate the approximate number of years since the organism has died. Dating dead organic material by this method is moderately reliable in samples up to about 50,000 years old, but beyond that the accuracy becomes unreliable.

8. According to paragraph 5, what happens to an organism after it dies?

(A) It tends to deteriorate rapidly.
(B) The various carbon isotopes decay.
(C) The supply of carbon-14 is no longer replenished.
(D) The stable carbon isotopes deteriorate.

Paragraph 5 is marked with an arrow [➡].

➡ Another radioactive element useful for dating is carbon-14, which decays into nitrogen-14. With a half-life of 5,730 years, carbon-14 decays much more rapidly than rubidium-87 and so is useful for measuring the ages of objects from the recent historical and geologic past, such as fossils, bones, wood, and other organic materials. Whereas rubidium-87 is incorporated into rocks during their formation, carbon-14, which is an essential element of the cells of organisms, becomes incorporated into living tissues as organisms grow. The ratio of carbon-14 to stable carbon isotopes in the organism is the same as it is in the atmosphere. When a living organism dies, no more carbon dioxide is absorbed and so no new carbon isotopes are added. The daughter nitrogen-14 isotope, existing in gaseous form, leaks out of the dead organism, and thus, we cannot use it to compare the ratio of original to daughter as is done with rubidium-87 and its daughter. However, as the amount of carbon-14 in the dead organism becomes less over time, we can compare the proportion of this isotope remaining with the proportion that is in the atmosphere and from this calculate the approximate number of years since the organism has died. Dating dead organic material by this method is moderately reliable in samples up to about 50,000 years old, but beyond that the accuracy becomes unreliable.

9. According to paragraph 5, why can't scientists compare the ratio of carbon-14 to nitrogen-14?

(A) The amount of nitrogen-14 is not predictable.
(B) The ratio of these two elements doesn't change.
(C) Nitrogen-14 has an unpredictable decay rate.
(D) Carbon-14 tends to evaporate too quickly.

Paragraph 5 is marked with an arrow [➡].

➡ Another radioactive element useful for dating is carbon-14, which decays into nitrogen-14. With a half-life of 5,730 years, carbon-14 decays much more rapidly than rubidium-87 and so is useful for measuring the ages of objects from the recent historical and geologic past, such as fossils, bones, wood, and other organic materials. Whereas rubidium-87 is incorporated into rocks during their formation, carbon-14, which is an essential element of the cells of organisms, becomes incorporated into living tissues as organisms grow. The ratio of carbon-14 to stable carbon isotopes in the organism is the same as it is in the atmosphere. When a living organism dies, no more carbon dioxide is absorbed and so no new carbon isotopes are added. The daughter nitrogen-14 isotope, existing in gaseous form, leaks out of the dead organism, and thus, we cannot use it to compare the ratio of original to daughter as is done with rubidium-87 and its daughter. However, as the amount of carbon-14 in the dead organism becomes less over time, we can compare the proportion of this isotope remaining with the proportion that is in the atmosphere and from this calculate the approximate number of years since the organism has died. Dating dead organic material by this method is moderately reliable in samples up to about 50,000 years old, but beyond that the accuracy becomes unreliable.

10. According to paragraph 5, the amount of carbon-14 in an organism

(A) replaces other carbon isotopes after an organism dies
(B) tends to be the same as the other carbon isotopes
(C) increases rapidly when an organism dies
(D) deteriorates from the moment of death

Paragraph 5 is marked with an arrow [➡].

➡ Another radioactive element useful for dating is carbon-14, which decays into nitrogen-14. With a half-life of 5,730 years, carbon-14 decays much more rapidly than rubidium-87 and so is useful for measuring the ages of objects from the recent historical and geologic past, such as fossils, bones, wood, and other organic materials. Whereas rubidium-87 is incorporated into rocks during their formation, carbon-14, which is an essential element of the cells of organisms, becomes incorporated into living tissues as organisms grow. The ratio of carbon-14 to stable carbon isotopes in the organism is the same as it is in the atmosphere. When a living organism dies, no more carbon dioxide is absorbed and so no new carbon isotopes are added. The daughter nitrogen-14 isotope, existing in gaseous form, leaks out of the dead organism, and thus, we cannot use it to compare the ratio of original to daughter as is done with rubidium-87 and its daughter. However, as the amount of carbon-14 in the dead organism becomes less over time, we can compare the proportion of this isotope remaining with the proportion that is in the atmosphere and from this calculate the approximate number of years since the organism has died. Dating dead organic material by this method is moderately reliable in samples up to about 50,000 years old, but beyond that the accuracy becomes unreliable.

11. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Both the unstable carbon-14 and stable carbon isotopes are taken in from the carbon dioxide present in the atmosphere.

Where would the sentence best fit?

Choose the letter of the square that shows where the sentence should be added.

Another radioactive element useful for dating is carbon-14, which decays into nitrogen-14. A With a half-life of 5,730 years, carbon-14 decays much more rapidly than rubidium-87 and so is useful for measuring the ages of objects from the recent historical and geologic past, such as fossils, bones, wood, and other organic materials. Whereas rubidium-87 is incorporated into rocks during their formation, carbon-14, which is an essential element of the cells of organisms, becomes incorporated into living tissues as organisms grow. B The ratio of carbon-14 to stable carbon isotopes in the organism is the same as it is in the atmosphere. C When a living organism dies, no more carbon dioxide is absorbed and so no new carbon isotopes are added. D The daughter nitrogen-14 isotope, existing in gaseous form, leaks out of the dead organism, and thus, we cannot use it to compare the ratio of original to daughter as is done with rubidium-87 and its daughter. However, as the amount of carbon-14 in the dead organism becomes less over time, we can compare the proportion of this isotope remaining with the proportion that is in the atmosphere and from this calculate the approximate number of years since the organism has died. Dating dead organic material by this method is moderately reliable in samples up to about 50,000 years old, but beyond that the accuracy becomes unreliable.

12. **Directions:** Select the appropriate phrases from the answer choices and match the dating technique to which they relate. TWO of the answer choices will NOT be used. **This question is worth 4 points.**

Write the letters of the answer choices in the spaces where they belong.
Refer to the full passage.

Answer Choices

- (A) Can be used for dating artifacts made of bones or wood
- (B) Destroys progeny isotopes
- (C) Essential to living organisms
- (D) Has a half-life of billions of years
- (E) Incorporated into minerals when they crystallized
- (F) Progeny cannot be used for dating
- (G) Unreliable for dating samples
- (H) Used for dating dead trees
- (I) Used for dating rocks

Rubidium-87

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- •
- •

Carbon-14

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- •
- •
- •

Questions 13–25

Demographic Transition

Historically, as countries have developed industrially, they have undergone declines in death rates followed by declines in birth rates. Over time they have tended to move from rapid increases in population to slower increases, then to zero growth and finally to population decreases. The model which demographers use to help explain these changes in population growth is known as the *demographic transition model.* In order to properly appreciate the demographic transition model, it is necessary to understand two basic concepts: the crude* birth rate (CBR) and the crude death rate (CDR). The CBR is determined by taking the number of births in a country in a given year and dividing it by the total population of the country and then multiplying the answer by one thousand. So, for example, the CBR of the United States in 2004 was 14 (in other words, there were 14 births per thousand living people in that year). CDR is worked out in a similar way. The CDR for the United States in 2004 was 8 per thousand.

The first stage of the demographic transition model portrays a preindustrial era when both the birth rate and the death rate were high. Typically, women gave birth to a large number of babies. This was partly due to cultural and religious pressures but also because families required a large number of children, since often many didn't survive into adulthood due to the harsh living conditions. Furthermore, children were needed to help adults work the land or perform other chores. The death rate was high due to the high incidence of diseases and famine and also because of poor hygiene. Total population tended to fluctuate due to occasional epidemics, but overall there was only a very gradual long-term increase during this stage.

During the second stage, improvements in hygiene, medical care, and food production led to a decrease in the death rate in newly industrializing regions of Western Europe. However, birth rates remained high due to tradition and because many people were involved in agrarian occupations. The combination of a lowered CDR and a stable CBR led to dramatic increases in population starting at the beginning of the nineteenth century.

In stage three, birth rates also began to fall. In cities there was less incentive to produce large numbers of children, since city dwellers no longer worked the land, and the cost of raising children in an urban environment was greater than in rural districts. Furthermore, more children survived into adulthood due to improved living conditions. These economic pressures led to a lower CBR and over time the numbers of people being born started to approximate the numbers dying.

The final stage, which some demographers have called the *postindustrial stage,* occurs when birth rates and death rates are about equal. In this case there is zero natural population growth. Over time the birth rate may fall below the death rate, and without immigration the total population may slowly decrease. By the early twenty-first century, several European countries were experiencing population declines due to the CDR outstripping the CBR. For example, in Italy in 2004 there were about 9 births per thousand against 10 deaths per thousand.

The demographic transition took about 200 years to complete in Europe. Many developing countries are still in stage two of the demographic transition model: births far outstrip deaths. In these countries, CDR has declined due to improvements in sanitation and increases in food productivity, but the birth rate has still not adjusted downward to the new realities of improved living conditions. This imbalance of births over deaths in the developing world is the fundamental reason for the dramatic population explosion in the latter half of the twentieth century. However, population statistics indicate that in many less developed countries the CBRs have begun to decline over recent decades, giving rise to optimism in some quarters about future trends. The rapid industrialization of many parts of the developing world has meant that these countries have reached stage three of the model much faster than countries

in the developed world did during the nineteenth century. This fact has led many demographers to predict that world population will reach an equilibrium level sooner and at a lower total than more pessimistic earlier predictions.

***crude:** not analyzed into specific classes

13. The word "it" in the passage refers to

(A) population
(B) year
(C) country
(D) number

Historically, as countries have developed industrially, they have undergone declines in death rates followed by declines in birth rates. Over time they have tended to move from rapid increases in population to slower increases, then to zero growth and finally to population decreases. The model which demographers use to help explain these changes in population growth is known as the *demographic transition model*. In order to properly appreciate the demographic transition model, it is necessary to understand two basic concepts: the crude birth rate (CBR) and the crude death rate (CDR). The CBR is determined by taking the number of births in a country in a given year and dividing it by the total population of the country and then multiplying the answer by one thousand. So, for example, the CBR of the United States in 2004 was 14 (in other words there were 14 births per thousand living people in that year). CDR is worked out in a similar way. The CDR for the United States in 2004 was 8 per thousand.

14. According to paragraph 1, what is useful about the demographic transition model?

(A) It helps explain trends in population growth over time.
(B) It can be used to measure birth and death rates.
(C) It clarifies the causes of population increase.
(D) It predicts the relative speed of population patterns.

Paragraph 1 is marked with an arrow [➡].

➡ Historically, as countries have developed industrially, they have undergone declines in death rates followed by declines in birth rates. Over time they have tended to move from rapid increases in population to slower increases, then to zero growth and finally to population decreases. The model which demographers use to help explain these changes in population growth is known as the *demographic transition model*. In order to properly appreciate the demographic transition model, it is necessary to understand two basic concepts: the crude birth rate (CBR) and the crude death rate (CDR). The CBR is determined by taking the number of births in a country in a given year and dividing it by the total population of the country and then multiplying the answer by one thousand. So, for example, the CBR of the United States in 2004 was 14 (in other words there were 14 births per thousand living people in that year). CDR is worked out in a similar way. The CDR for the United States in 2004 was 8 per thousand.

15. The word "portrays" in the passage is closest in meaning to

(A) suggests
(B) represents
(C) transmits
(D) associates

The first stage of the demographic transition model portrays a preindustrial era when both the birth rate and the death rate were high. Typically, women gave birth to a large number of babies. This was partly due to cultural and religious pressures but also because families required a large number of children, since often many didn't survive into adulthood due to the harsh living conditions. Furthermore, children were needed to help adults work the land or perform other chores. The death rate was high due to the high incidence of diseases and famine and also because of poor hygiene. Total population tended to fluctuate due to occasional epidemics, but overall there was only a very gradual long-term increase during this stage.

16. In paragraph 2, which of the following is NOT mentioned as relevant to the high birth rates in the preindustrial stage?

(A) The high level of childhood deaths
(B) The need for help in work situations
(C) The pressures of tradition
(D) The high rate of maternal deaths

Paragraph 2 is marked with an arrow [➡].

➡ The first stage of the demographic transition model portrays a preindustrial era when both the birth rate and the death rate were high. Typically, women gave birth to a large number of babies. This was partly due to cultural and religious pressures but also because families required a large number of children, since often many didn't survive into adulthood due to the harsh living conditions. Furthermore, children were needed to help adults work the land or perform other chores. The death rate was high due to the high incidence of diseases and famine and also because of poor hygiene. Total population tended to fluctuate due to occasional epidemics, but overall there was only a very gradual long-term increase during this stage.

17. What can be inferred from paragraph 2 about the effect of epidemic diseases on population during the preindustrial stage?

(A) They tended to dramatically lower the population growth.
(B) They caused the population to decline temporarily.
(C) They reduced overall population significantly.
(D) They led to sudden overall increases in the birth rate.

Paragraph 2 is marked with an arrow [➡].

➡ The first stage of the demographic transition model portrays a preindustrial era when both the birth rate and the death rate were high. Typically, women gave birth to a large number of babies. This was partly due to cultural and religious pressures but also because families required a large number of children, since often many didn't survive into adulthood due to the harsh living conditions. Furthermore, children were needed to help adults work the land or perform other chores. The death rate was high due to the high incidence of diseases and famine and also because of poor hygiene. Total population tended to fluctuate due to occasional epidemics, but overall there was only a very gradual long-term increase during this stage.

18. The word "agrarian" in the passage is closest in meaning to

(A) basic
(B) menial
(C) farming
(D) village

During the second stage, improvements in hygiene, medical care, and food production led to a decrease in the death rate in newly industrializing regions of Western Europe. However, birth rates remained high due to tradition and because many people were involved in agrarian occupations. The combination of a lowered CDR and a stable CBR led to dramatic increases in population starting at the beginning of the nineteenth century.

19. According to paragraph 4, what was one of the main causes of the drop in birth rates?

(A) The improvements in hygiene
(B) The lack of agricultural work
(C) The development of urbanization
(D) The superior environment

Paragraph 4 is marked with an arrow [➡].

➡ In stage three, birth rates also began to fall. In cities there was less incentive to produce large numbers of children, since city dwellers no longer worked the land, and the cost of raising children in an urban environment was greater than in rural districts. Furthermore, more children survived into adulthood due to improved living conditions. These economic pressures led to a lower CBR and over time the numbers of people being born started to approximate the numbers dying.

20. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

(A) The population gradually declines when there is no immigration and deaths exceed births.
(B) In time there may be an overall drop in population as the birth rate and death rate fluctuate.
(C) The relationship between birth and death rates is an important reason for limiting immigration.
(D) If population losses aren't replaced through immigration, the birth rate may fall below the death rate.

The final stage, which some demographers have called the *postindustrial stage,* occurs when birth rates and death rates are about equal. In this case there is zero natural population growth. Over time, the birth rate may fall below the death rate, and without immigration the total population may slowly decrease. By the early twenty-first century, several European countries were experiencing population declines due to the CDR outstripping the CBR. For example, in Italy in 2004 there were about 9 births per thousand against 10 deaths per thousand.

21. The word "equilibrium" in the passage is closest in meaning to

(A) economic
(B) stable
(C) variable
(D) fixed

The demographic transition took about 200 years to complete in Europe. Many developing countries are still in stage two of the demographic transition model: births far outstrip deaths. In these countries, CDR has declined due to improvements in sanitation and increases in food productivity, but, the birth rate has still not adjusted downward to the new realities of improved living conditions. This imbalance of births over deaths in the developing world is the fundamental reason for the dramatic population explosion in the latter half of the twentieth century. However, population statistics indicate that in many less developed countries the CBRs have begun to decline over recent decades, giving rise to optimism in some quarters about future trends. The rapid industrialization of many parts of the developing world has meant that these countries have reached stage three of the model much faster than countries in the developed world did during the nineteenth century. This fact has led many demographers to predict that world population will reach an equilibrium level sooner and at a lower total than more pessimistic earlier predictions.

22. According to paragraph 6, what is at the root of the huge population increases during the twentieth century?

(A) The improvements in health throughout the developing world
(B) The fact that birth rates are increasing in many countries
(C) The lack of resources in many developing countries
(D) The failure of the CDR to respond to economic pressures

Paragraph 6 is marked with an arrow [➡].

➡ The demographic transition took about 200 years to complete in Europe. Many developing countries are still in stage two of the demographic transition model: births far outstrip deaths. In these countries, CDR has declined due to improvements in sanitation and increases in food productivity, but the birth rate has still not adjusted downward to the new realities of improved living conditions. This imbalance of births over deaths in the developing world is the fundamental reason for the dramatic population explosion in the latter half of the twentieth century. However, population statistics indicate that in many less developed countries the CBRs have begun to decline over recent decades, giving rise to optimism in some quarters about future trends. The rapid industrialization of many parts of the developing world has meant that these countries have reached stage three of the model much faster than countries in the developed world did during the nineteenth century. This fact has led many demographers to predict that world population will reach an equilibrium level sooner and at a lower total than more pessimistic earlier predictions.

23. Why does the author mention the optimism felt in some quarters about future population trends?

(A) To introduce the fact that birth rates in some developing countries may be declining faster than anticipated

(B) To emphasize that most researchers have taken a pessimistic view of population expansion

(C) To show that the demographic transition is a valid model of population trends

(D) To suggest that some countries have worked hard at reducing birth rates

[Refer to the full passage.]

24. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Industrialization had led to increased urbanization.

Where would the sentence best fit?

Choose the letter of the square that shows where the sentence should be added.

In stage three, birth rates also began to fall. **A** In cities there was less incentive to produce large numbers of children, since city dwellers no longer worked the land, and the cost of raising children in an urban environment was greater than in rural districts. **B** Furthermore, more children survived into adulthood due to improved living conditions. **C** These economic pressures led to a lower CBR and over time the numbers of people being born started to approximate the numbers dying. **D**

25. **Directions:** An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. **This question is worth 2 points.**

Write the letters of the answer choices in the spaces where they belong.
Refer to the full passage.

The demographic transition model links trends in population growth to the level of industrial development.

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-
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Answer Choices

(A) Preindustrial populations tended to increase due to the large numbers of births and a slowly declining death rate.

(B) Due to economic pressures, the birth rate dropped to match the death rate, leading to zero growth and eventually a decline in population.

(C) High birth and death rates are associated with a preindustrial stage of development when there was only a gradual increase in overall population numbers.

(D) Improvements in medical techniques led to a dramatic drop in death rates, allowing industrialization to increase.

(E) Dramatic increases in population occurred when the death rates declined due to improvements in the quality of life.

(F) The final stage of demographic transition occurs when birth rates outstrip death rates, leading to a new round of population growth.

Questions 26–39

Communicating with the Future

In the 1980s the United States Department of Energy was looking for suitable sites to bury radioactive waste material generated by its nuclear energy programs. The government was considering burying the dangerous waste in deep underground chambers in remote desert areas. The problem, however, was that nuclear waste remains highly radioactive for thousands of years. The commission entrusted with tackling the problem of waste disposal was aware that the dangers posed by radioactive emissions must be communicated to our descendants of at least 10,000 years hence. So the task became one of finding a way to tell future societies about the risk posed by these deadly deposits.

Of course, human society in the distant future may be well aware of the hazards of radiation. Technological advances may one day provide solutions to this dilemma. But the belief in constant technological advancement is based on our perceptions of advances made throughout history and prehistory. We cannot be sure that society won't have slipped backward into an age of barbarism* due to any of several catastrophic events, whether the result of nature such as the onset of a new ice age or perhaps humankind's failure to solve the scourges of war and pollution. In the event of global catastrophe, it is quite possible that humans of the distant future will be on the far side of a broken link of communication and technological understanding.

The problem then becomes how to inform our descendants that they must avoid areas of potential radioactive seepage* given that they may not understand any currently existing language and may have no historical or cultural memory. So, any message dedicated to future reception and decipherment must be as universally understandable as possible.

It was soon realized by the specialists assigned the task of devising the communication system that any material in which the message was written might not physically endure the great lengths of time demanded. The second law of thermodynamics shows that all material disintegrates over time. Even computers that might carry the message cannot be expected to endure long enough. Besides, electricity supplies might not be available in 300 generations. Other media storage methods were considered and rejected for similar reasons.

The task force under the linguist Thomas Sebeok finally agreed that no foolproof way would be found to send a message across so many generations and have it survive physically and be decipherable by a people with few cultural similarities to us. Given this restriction, Sebeok suggested the only possible solution was the formation of a committee of guardians of knowledge. Its task would be to dedicate itself to maintaining and passing on the knowledge of the whereabouts and dangers of the nuclear waste deposits. This so-called atomic priesthood would be entrusted with keeping knowledge of this tradition alive through millennia and in developing the tradition into a kind of mythical taboo forbidding people to tamper in any way with the nuclear waste sites. Only the initiated atomic priesthood of experts would have the scientific knowledge to fully understand the danger. Those outside the priesthood would be kept away by a combination of rituals and legends designed to warn off intruders.

This proposal has been criticized because of the possibility of a break in continuity of the original message. Furthermore, there is no guarantee that any warning or sanction passed on for millennia would be obeyed, nor that it could survive with its original meaning intact. To counterbalance this possibility, Sebeok's group proposed a "relay system" in which information is passed on over relatively short periods of time, just three generations ahead. The message is then to be renewed and redesigned if necessary for the following three generations and so on over the required time span. In this way information could be relayed into the future and avoid the possibility of physical degradation.

A second defect is more difficult to dismiss, however. This is the problem of social exclusiveness brought about through possession of vital knowledge. Critics point out that the atomic priesthood could use its secret knowledge to control those who are scientifically ignorant. The establishment of such an association of insiders holding powerful knowledge not available except in mythic form to nonmembers would be a dangerous precedent for future social developments.

***barbarism:** a state of existence in which the experience, habits, and culture of modern life are absent

***seepage:** an amount of liquid or gas that flows through another substance

26. The word "chambers" in the passage is closest in meaning to

(A) cavities
(B) partitions
(C) openings
(D) fissures

In the 1980s the United States Department of Energy was looking for suitable sites to bury radioactive waste material generated by its nuclear energy programs. The government was considering burying the dangerous waste in deep underground chambers in remote desert areas. The problem, however, was that nuclear waste remains highly radioactive for thousands of years. The commission entrusted with tackling the problem of waste disposal was aware that the dangers posed by radioactive emissions must be communicated to our descendants of at least 10,000 years hence. So the task became one of finding a way to tell future societies about the risk posed by these deadly deposits.

27. What problem faced the commission assigned to deal with the burial of nuclear waste?

(A) How to reduce the radioactive life of nuclear waste materials
(B) How to notify future generations of the risks of nuclear contamination
(C) How to form a committee that could adequately express various nuclear risks
(D) How to choose burial sites so as to minimize dangers to people

[Refer to the full passage.]

28. In paragraph 2, the author explains the possible circumstances of future societies

(A) to warn us about possible natural catastrophes
(B) to highlight humankind's inability to resolve problems
(C) to question the value of our trust in technological advances
(D) to demonstrate the reason nuclear hazards must be communicated

Paragraph 2 is marked with an arrow [➡].

➡ Of course, human society in the distant future may be well aware of the hazards of radiation. Technological advances may one day provide solutions to this dilemma. But the belief in constant technological advancement is based on our perceptions of advances made throughout history and prehistory. We cannot be sure that society won't have slipped backward into an age of barbarism due to any of several catastrophic events, whether the result of nature such as the onset of a new ice age or perhaps humankind's failure to solve the scourges of war and pollution. In the event of global catastrophe, it is quite possible that humans of the distant future will be on the far side of a broken link of communication and technological understanding.

29. The word "scourges" in the passage is closest in meaning to

(A) worries
(B) pressures
(C) afflictions
(D) annoyances

Of course, human society in the distant future may be well aware of the hazards of radiation. Technological advances may one day provide solutions to this dilemma. But the belief in constant technological advancement is based on our perceptions of advances made throughout history and prehistory. We cannot be sure that society won't have slipped backward into an age of barbarism due to any of several catastrophic events, whether the result of nature such as the onset of a new ice age or perhaps humankind's failure to solve the scourges of war and pollution. In the event of global catastrophe, it is quite possible that humans of the distant future will be on the far side of a broken link of communication and technological understanding.

30. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

(A) A message for future generations must be comprehensible to anyone in the world.
(B) A universally understandable message must be deciphered for future generations.
(C) Any message that is globally understandable must be received and deciphered.
(D) The message that future generations receive and interpret must be dedicated.

The problem then becomes how to inform our descendants that they must avoid areas of potential radioactive seepage given that they may not understand any currently existing language and may have no historical or cultural memory. So, any message dedicated to future reception and decipherment must be as universally understandable as possible.

31. In paragraph 4, the author mentions the second law of thermodynamics

(A) to contrast the potential life span of knowledge with that of material objects
(B) to give the basic scientific reason behind the breakdown of material objects
(C) to show that knowledge can be sustained over millennia
(D) to support the view that nuclear waste will disperse with time

Paragraph 4 is marked with an arrow [➡].

➡ It was soon realized by the specialists assigned the task of devising the communication system that any material in which the message was written might not physically endure the great lengths of time demanded. The second law of thermodynamics shows that all material disintegrates over time. Even computers that might carry the message cannot be expected to endure long enough. Besides, electricity supplies might not be available in 300 generations. Other media storage methods were considered and rejected for similar reasons.

32. The word "Its" in the passage refers to

(A) knowledge
(B) guardians
(C) committee
(D) solution

The task force under the linguist Thomas Sebeok finally agreed that no foolproof way would be found to send a message across so many generations and have it survive physically and be decipherable by a people with few cultural similarities to us. Given this restriction, Sebeok suggested the only possible solution was the formation of a committee of guardians of knowledge. Its task would be to dedicate itself to maintaining and passing on the knowledge of the whereabouts and dangers of the nuclear waste deposits. This so-called atomic priesthood would be entrusted with keeping knowledge of this tradition alive through millennia and in developing the tradition into a kind of mythical taboo forbidding people to tamper in any way with the nuclear waste sites. Only the initiated atomic priesthood of experts would have the scientific knowledge to fully understand the danger. Those outside the priesthood would be kept away by a combination of rituals and legends designed to warn off intruders.

33. In paragraph 5, why is the proposed committee of guardians referred to as the "atomic priesthood"?

(A) Because they would be an exclusive religious order
(B) Because they would develop mythical taboos surrounding their traditions
(C) Because they would use rituals and legends to maintain their exclusiveness
(D) Because they would be an exclusive group with knowledge about nuclear waste sites

Paragraph 5 is marked with an arrow [➡].

➡ The task force under the linguist Thomas Sebeok finally agreed that no foolproof way would be found to send a message across so many generations and have it survive physically and be decipherable by a people with few cultural similarities to us. Given this restriction, Sebeok suggested the only possible solution was the formation of a committee of guardians of knowledge. Its task would be to dedicate itself to maintaining and passing on the knowledge of the whereabouts and dangers of the nuclear waste deposits. This so-called atomic priesthood would be entrusted with keeping knowledge of this tradition alive through millennia and in developing the tradition into a kind of mythical taboo forbidding people to tamper in any way with the nuclear waste sites. Only the initiated atomic priesthood of experts would have the scientific knowledge to fully understand the danger. Those outside the priesthood would be kept away by a combination of rituals and legends designed to warn off intruders.

34. The word "sanction" in the passage is closest in meaning to

(A) security
(B) approval
(C) counsel
(D) penalty

This proposal has been criticized because of the possibility of a break in continuity of the original message. Furthermore, there is no guarantee that any warning or sanction passed on for millennia would be obeyed, nor that it could survive with its original meaning intact. To counterbalance this possibility, Sebeok's group proposed a "relay system" in which information is passed on over relatively short periods of time, just three generations ahead. The message is then to be renewed and redesigned if necessary for the following three generations and so on over the required time span. In this way information could be relayed into the future and avoid the possibility of physical degradation.

35. According to the author, why did the task force under Sebeok propose a relay system for passing on information?

(A) To compensate for the fact that meaning will not be stable over long periods of time
(B) To show that Sebeok's ideas created more problems than they solved
(C) To contrast Sebeok's ideas with those proposed by his main critics
(D) To support the belief that breaks in communication are inevitable over time

[Refer to the full passage.]

36. According to paragraph 7, the second defect of the atomic priesthood proposal is that it could lead to

(A) the possible misuse of exclusive knowledge
(B) the establishment of a scientifically ignorant society
(C) the priesthood's criticism of points concerning vital knowledge
(D) the nonmembers turning knowledge into dangerous mythical forms

Paragraph 7 is marked with an arrow (➡).

➡ A second defect is more difficult to dismiss, however. This is the problem of social exclusiveness brought about through possession of vital knowledge. Critics point out that the atomic priesthood could use its secret knowledge to control those who are scientifically ignorant. The establishment of such an association of insiders holding powerful knowledge not available except in mythic form to nonmembers would be a dangerous precedent for future social developments.

37. All of the following are mentioned in the passage as difficulties in devising a communication system with the future EXCEPT

(A) the loss of knowledge about today's civilization
(B) the failure to maintain communication links
(C) the inability of materials to endure over time
(D) the exclusiveness of a priesthood

[Refer to the full passage.]

38. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Perhaps scientists will find efficient ways to deactivate radioactive materials.

Where would the sentence best fit?

Choose the letter of the square that shows where the sentence should be added.

Of course, human society in the distant future may be well aware of the hazards of radiation. **A** Technological advances may one day provide solutions to this dilemma. **B** But the belief in constant technological advancement is based on our perceptions of advances made throughout history and prehistory. **C** We cannot be sure that society won't have slipped backward into an age of barbarism due to any of several catastrophic events, whether the result of nature such as the onset of a new ice age or perhaps humankind's failure to solve the scourges of war and pollution. **D** In the event of global catastrophe, it is quite possible that humans of the distant future will be on the far side of a broken link of communication and technological understanding.

39. **Directions:** An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. **This question is worth 2 points.**

Write the letters of the answer choices in the spaces where they belong.
Refer to the full passage.

The problem of how to pass on knowledge of the dangers posed by buried radioactive waste was addressed by a commission of experts.

-
-
-

Answer Choices

(A) A task force argued that a select group should be entrusted with passing on knowledge of the dangers of radioactive deposits by using a relay system.

(B) Electricity supplies may not exist in the future, so computers should not be entrusted with storage of vital information.

(C) Technological improvements will possibly allow future generations to decontaminate nuclear waste.

(D) The atomic priesthood proposal has been criticized due to its potential for creating a future society divided into those who hold special knowledge and those who don't.

(E) The atomic priesthood would develop rituals and legends designed to warn off trespassers into the nuclear burial sites.

(F) Various means of storing and passing on information are unreliable over time because of the difficulty of communicating with future societies and the likely physical decay of storage media.

LISTENING SECTION
Directions

This section measures your ability to understand conversations and lectures in English. You will hear each conversation or lecture only one time. After each conversation or lecture, you will answer some questions about it.

The questions typically ask about the main idea and supporting details. Some questions ask about a speaker's purpose or attitude. Answer the questions based on what is stated or implied by the speakers.

You may take notes while you listen. You may use your notes to help you answer the questions. Your notes will not be scored.

In some questions, you will see this icon: 🎧. This means that you will hear, but not see, part of the question.

Some questions have special directions. These directions appear in a gray box.

Most questions are worth one point. A question worth more than one point will have special instructions indicating how many points you can receive.

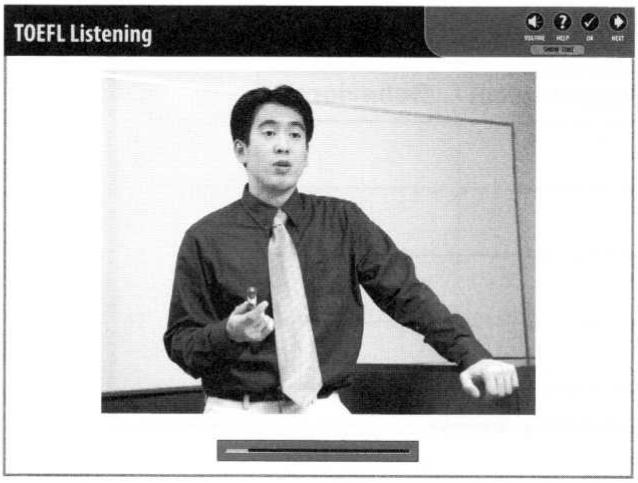
You will have 20 minutes to answer the questions in this section.

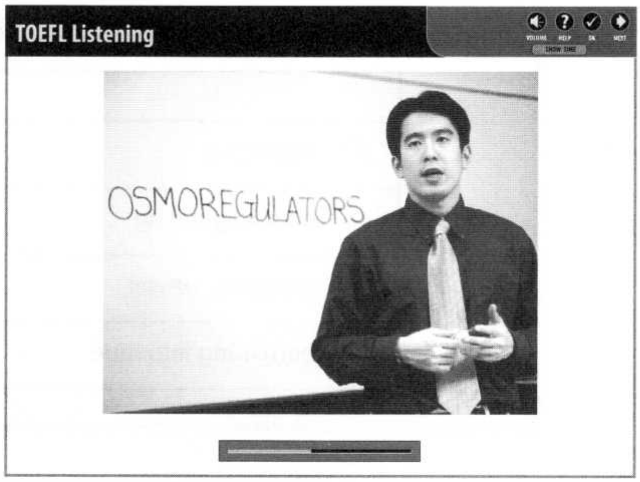
Now get ready to listen. You may take notes.

START ▶

Questions 1–6

Listen to part of a lecture in a biology class.





Now get ready to answer the questions. You may use your notes to help you answer.

1. What is the lecture mainly about?
   - (A) How the tide affects the estuarine environment
   - (B) How the adaptations of estuarine organisms developed
   - (C) How the salinity of water is associated with maintaining the right balance
   - (D) How organisms have adapted to differing concentrations of water and salt

2. Listen again to part of the lecture. Then answer the question.
   What does the professor imply when he says this: 🎧
   - (A) The students probably know the term already.
   - (B) The students should have kept better notes.
   - (C) The term is not relevant to the lecture.
   - (D) The term is in their class notes.

3. What two adaptations are mentioned that allow crabs to survive in the estuary environment?

   Choose 2 answers.

   - [A] Their hard shells keep out water and salt.
   - [B] Their gills and skin adjust to changes rapidly.
   - [C] They can burrow into the soft mud.
   - [D] Their internal organs regulate salt intake.

4. Listen again to part of the lecture. Then answer the question.
   Why does the professor says this: 🎧
   - (A) To test the students' understanding of osmoregulators
   - (B) To find out if the students understand how blue crabs breed
   - (C) To show a discrepancy in the behavioral pattern of the crab
   - (D) To give the students an opportunity to ask questions

5. Indicate whether each word or phrase below describes a physiological adaptation or behavioral adaptation.

Check the correct box for each statement.

	Physiological	Behavioral
(A) migrating		
(B) osmoregulating		
(C) dropping leaves		
(D) burrowing into mud		

6. The adaptations of which estuarine creature are NOT discussed in the lecture?

(A) fish
(B) birds
(C) plants
(D) invertebrates

Questions 7–11

Listen to a conversation between a student and a professor.

Now get ready to answer the questions. You may use your notes to help you answer.

7. Why does the student go to see the professor?
   - (A) To discuss degree requirements
   - (B) To get advice about changing degrees
   - (C) To ask about American Sign Language
   - (D) To inform the professor of changes in his degree program

8. Listen again to part of the conversation. Then answer the question.
   What can be inferred about the professor?
   - (A) She does not understand why the student has come to her office.
   - (B) She expects the student to have a background in linguistics.
   - (C) She advises students getting degrees in linguistics.
   - (D) She is not sure why students want to switch majors.

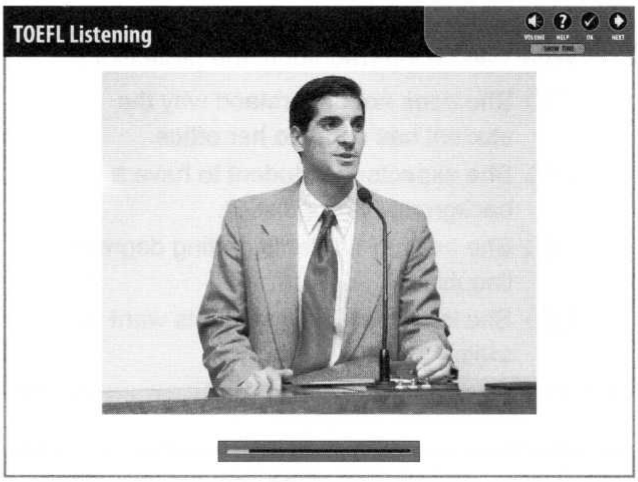
9. Why does the student want to change degree programs?
   - (A) He wants to study languages in Peru.
   - (B) He's worried about financing his studies.
   - (C) He enjoyed his English teaching experience.
   - (D) He likes helping people with speech disorders.

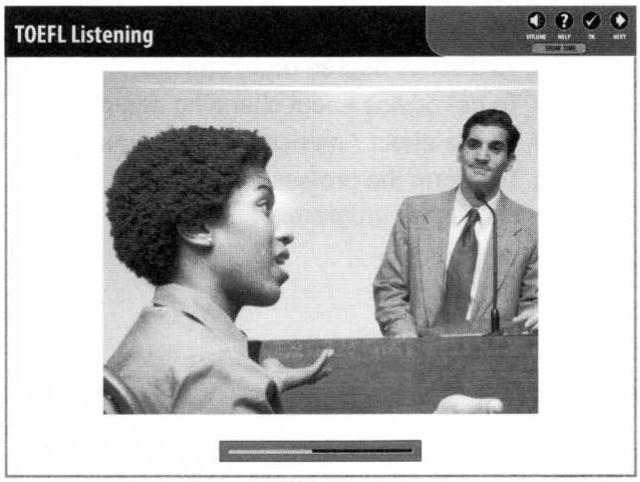
10. Listen again to part of the conversation. Then answer the question.
    Why does the professor say this: 🎧
    - (A) To avoid giving the student false hopes
    - (B) To influence the student's choice of languages
    - (C) To suggest that the student may have false information
    - (D) To point out to the student the reasons to be cautious

11. What can be inferred about the student?
    - (A) He may not be able to finance a change in degree programs.
    - (B) He does not intend to take a heavier course load to graduate on schedule.
    - (C) He has highlighted all the prerequisites for upper-level courses.
    - (D) He wants to look at all the options for other language courses.

Questions 12–17

Listen to a discussion in an education class.





Now get ready to answer the questions. You may use your notes to help you answer.

12. What is the discussion mainly about?
    - (A) The kinds of questions that encourage thought processes
    - (B) The factors that discourage students from asking questions
    - (C) The personality traits of a particular professor in the faculty
    - (D) The way classroom size affects students' abilities to form questions

13. Why does the professor say this: 🎧
    - (A) He is expecting the students to consider an answer to his questions.
    - (B) He is preparing the students for the discussion that he wants them to take up.
    - (C) He is giving an example of the kinds of questions teachers ask students.
    - (D) He is telling the students the kinds of questions students should ask themselves.

14. Listen again to part of the discussion. Then answer the question.
    What can be inferred about the students?
    - (A) They both question the professor's classification of the pressure of feeling stupid.
    - (B) The woman doesn't agree with the man that class size is an aspect of appearing stupid.
    - (C) The man is convinced that it is better to ask questions in a small class.
    - (D) They have different reasons for considering class size as a negative pressure.

15. Why does Lisa mention Professor Clarkson?
    - (A) To make fun of his course
    - (B) To give an example of time pressure
    - (C) To praise his style of answering questions
    - (D) To encourage the others to take his course

16. In the discussion, the professor elicits different reasons why students don't ask questions. Indicate whether each of the following is one of the discussed fears.

Check the correct box for each statement.

	Yes	No
(A) Fear of asking too many questions		
(B) Fear of being considered stupid		
(C) Fear of being the victim of a joke		
(D) Fear of making a mistake		
(E) Fear of wasting a professor's time		

17. Listen again to part of the discussion. Then answer the question.
Why does the professor say this:

(A) To change the group discussion assignment to a different topic

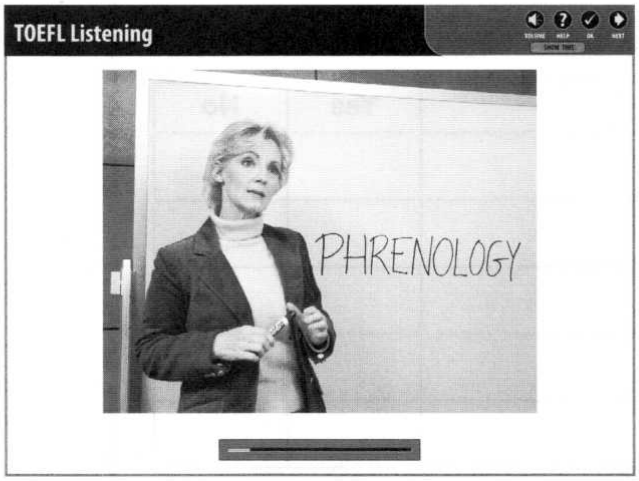
(B) To challenge the students to reconsider the pressures they have mentioned

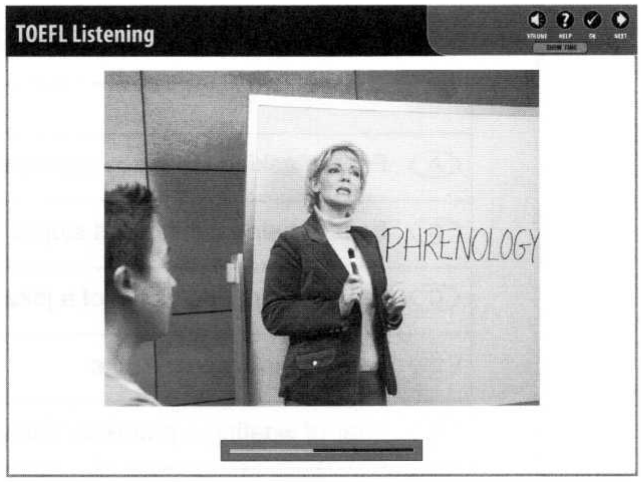
(C) To inform the students that they have not done a good job of listing the pressures

(D) To indicate to the students that they are not limited to the pressures written on the board

Questions 18–23

Listen to a lecture in a history of ideas class.





Now get ready to answer the questions. You may use your notes to help you answer.

18. What is the lecture mainly about?

(A) A theory about criminal personality development
(B) A system for evaluating personality theory
(C) A method of psychological analysis
(D) A comparison of early psychological theories

19. What points does the professor make about Gall's phrenological theory?

Choose 2 answers.

[A] Abilities were evenly distributed in the brain.
[B] Each part of the brain was used for a different ability.
[C] The shape of the skull corresponded to brain shape.
[D] The shape of the brain was less important than the size.

20. Listen again to part of the lecture. Then answer the question.
Why does the professor say this: 🎧

(A) To express her disagreement with the students' opinions
(B) To agree that many people might think this theory is strange
(C) To test the students' understanding of the concepts
(D) To remind the students of a previous unusual idea

21. According to the professor, how did phrenologists approach evidence?

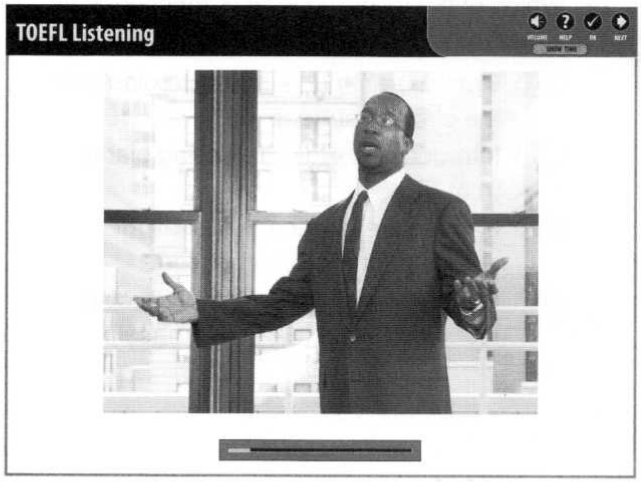
(A) They carefully examined evidence that did not fit with their theory.
(B) They were not interested in seeking confirmation of their claims.
(C) They only accepted the evidence that seemed to fit their claims.
(D) They looked for evidence that they knew was false.

22. What does the professor imply about phrenology?
   - (A) It was once more highly thought of than today.
   - (B) It was mainly a waste of research time.
   - (C) It was never more than a minority interest.
   - (D) It was usually on the receiving end of satirical humor.

23. According to the professor, which of the following modern beliefs was contributed to by phrenology?
   - (A) Certain organs within the brain are responsible for certain kinds of behavior.
   - (B) The power of the brain is related to the size and shape of the organ.
   - (C) The shape of the skull is determined by the shape of the brain.
   - (D) Certain abilities are related to specific areas of the brain.

Questions 24–29

Listen to a discussion in an astronomy class.



Now get ready to answer the questions. You may use your notes to help you answer.

24. What is the discussion mainly about?
   - (A) The differences between conditions on Mars and conditions on Earth
   - (B) The possibility of radically transforming the conditions on Mars
   - (C) The necessity of human migration in the search for new resources
   - (D) The ethical problems arising from the human settlement of Mars

25. Why does the professor say this: 🎧
   - (A) To express doubt about the possibility of terraforming
   - (B) To criticize the science community for wasting resources
   - (C) To indicate that terraforming would be a technologically amazing feat
   - (D) To encourage students to think clearly about the need for terraforming

26. Why does the professor mention the migration of Europeans to the Americas?

(A) To emphasize that people like to explore new regions
(B) To give an example of the fact that population pressures cause migrations
(C) To provide background information on the need to terraform Mars
(D) To argue that the settlement of the Americas was a valuable use of resources

27. According to the professor, why is Mars the planet that scientists want to terraform?

Choose 2 answers.

[A] It is nearer to Earth than other planets.
[B] Its atmospheric conditions are rather similar to those on Earth.
[C] The other planets are unsuitable for several reasons.
[D] Mars contains water and its surface is solid.

28. Listen again to part of the discussion. Then answer the question.
Why does the professor say this: 🎧

(A) He wants to focus on the technological considerations of terraforming.
(B) He thinks the ethical considerations are not relevant to classroom discussion.
(C) He thinks the students know his opinion about the right way to use Earth's resources.
(D) He wants the students to make up their own minds about the ethics of terraforming.

29. Which of the following is NOT mentioned as a method of terraforming Mars?

(A) Crashing ammonia-rich asteroids onto the planet's surface
(B) Introducing oxygen-releasing plants from Earth
(C) Heating the surface with sunlight reflected from orbiting mirrors
(D) Building greenhouse gas producing factories on the Martian surface

Questions 30–34

Listen to part of a conversation between a student and a research coordinator.

Now get ready to answer the questions. You may use your notes to help you answer.

30. Why has the student gone to see the research coordinator?
   - (A) To investigate food disorders
   - (B) To find out where the Pharmacology Lab is
   - (C) To participate in an experiment
   - (D) To volunteer for making weekly breakfasts

31. Why does the research coordinator ask the student personal questions?
   - (A) To make sure the student fits all the requirements
   - (B) To test if the student has read the announcement correctly
   - (C) To see if the student understands the experiment
   - (D) To help the student decide whether she wants to participate

32. Listen again to part of the conversation. Then answer the question.
   Why does the student say this: 🎧
   - (A) Because she gets ill infrequently
   - (B) Because she can only know about her current health
   - (C) Because she intends to stay well for the week
   - (D) Because her bout with flu is over

33. Which of the following topics does the research coordinator NOT ask the student about?
   - (A) Her susceptibility to allergies
   - (B) Her use of medications
   - (C) Her preferences for snacks
   - (D) Her current health situation

34. What example does the research coordinator give of the breakfast that will be provided?
   - (A) Pickled onions or grasshoppers
   - (B) Candy bars or potato chips
   - (C) Yogurt or nuts
   - (D) Eggs or cereal

STOP ■

SPEAKING SECTION

Directions

In this section of the test, you will be able to demonstrate your ability to speak about a variety of topics. You will answer six questions by recording your response. Answer each of the questions as completely as possible.

In questions 1 and 2, you will first hear a statement or question about familiar topics. You will then speak about these topics. Your response will be scored on your ability to speak clearly and coherently about the topics.

In questions 3 and 4, you will first read a short text. You will then listen to a talk on the same topic.

You will be asked a question about what you have read and heard. You will need to combine appropriate information from the text and the talk to provide a complete answer to the question. Your response will be scored on your ability to speak clearly and coherently and on your ability to accurately convey information about what you read and heard.

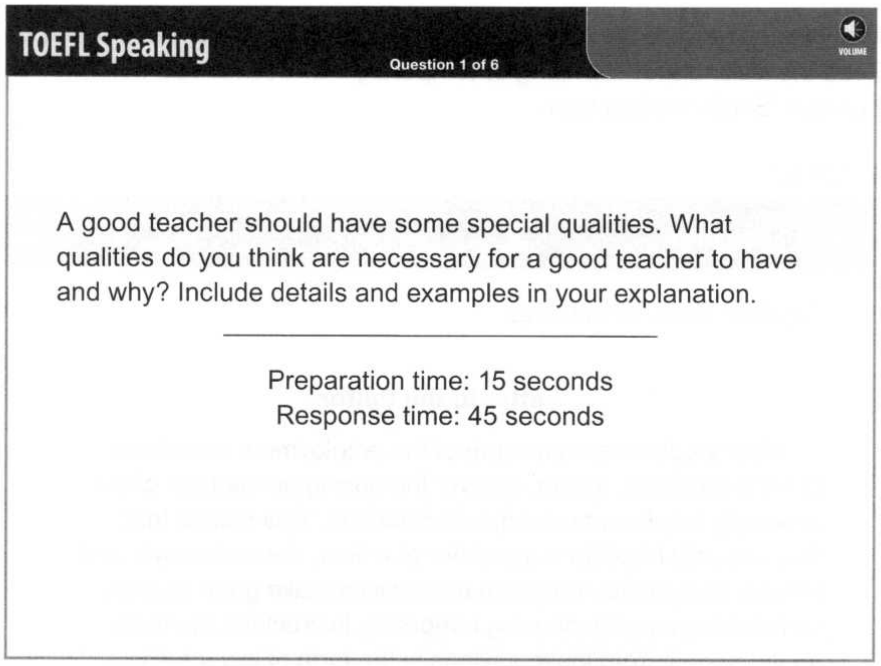
In questions 5 and 6, you will listen to part of a conversation or a lecture. You will be asked a question about what you heard. Your response will be scored on your ability to speak clearly and coherently and on your ability to accurately convey information about what you heard.

You may take notes while you read and while you listen to the conversations and lectures. You may use your notes to help prepare your response.

Listen carefully to the directions for each question. For each question you will be given a short time to prepare your response. When the preparation time is up, you will be told to begin your response.

START ▶

1. Please listen carefully.



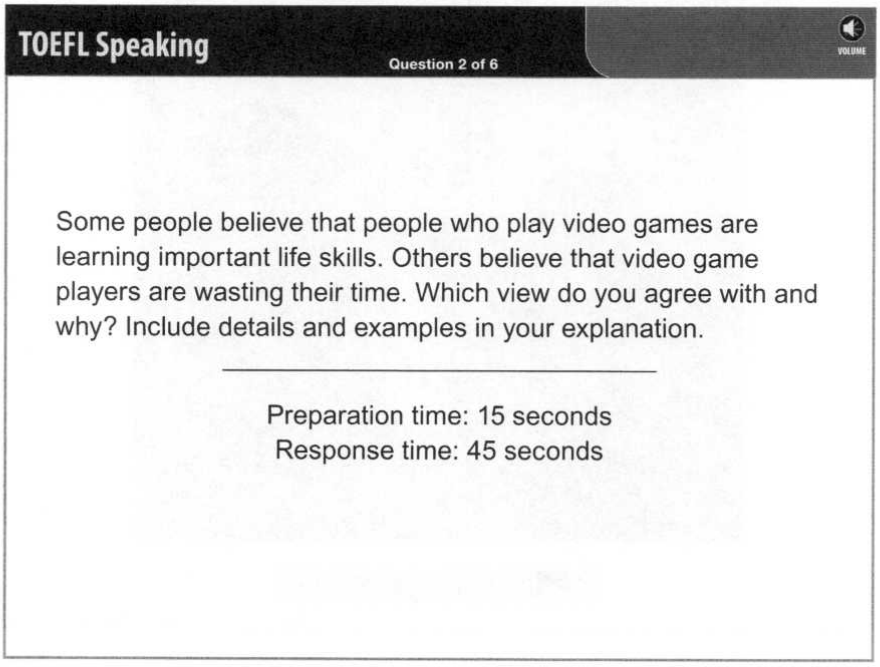
You may begin to prepare your response after the beep.

Please begin speaking after the beep.

STOP ■

START ▶

2. Please listen carefully.



You may begin to prepare your response after the beep.

Please begin speaking after the beep.

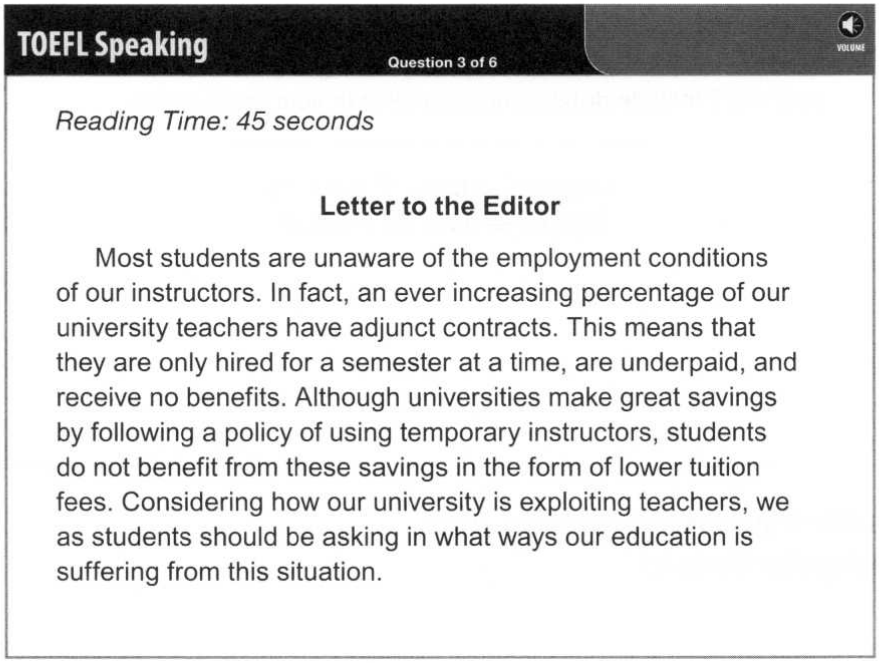
STOP ■

START ▶

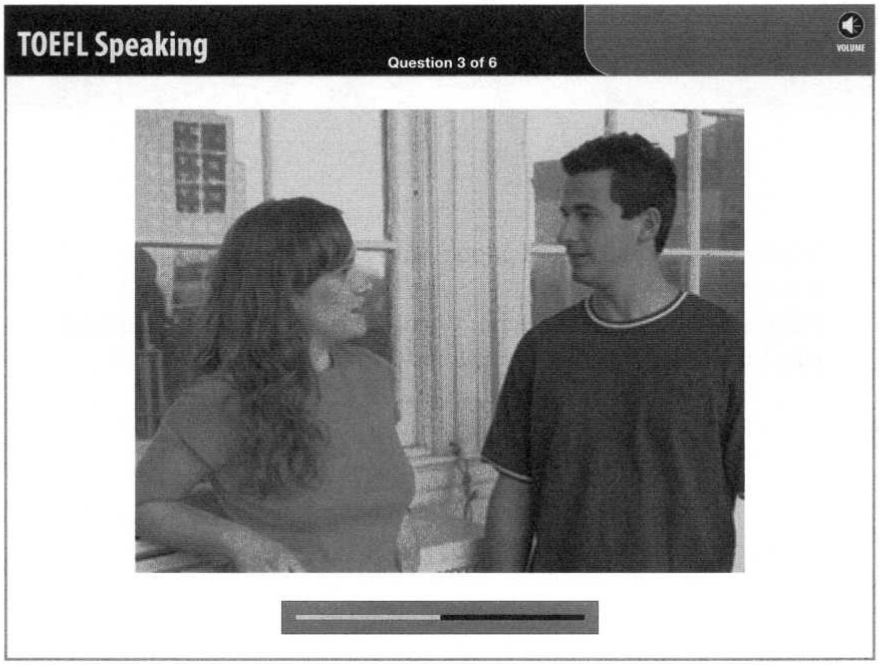
3. Please listen carefully.

The University of the Rockies newspaper has published a letter to the editor concerning a university policy. Read the letter about the hiring of temporary instructors. You will have 45 seconds to read the letter. Begin reading now.

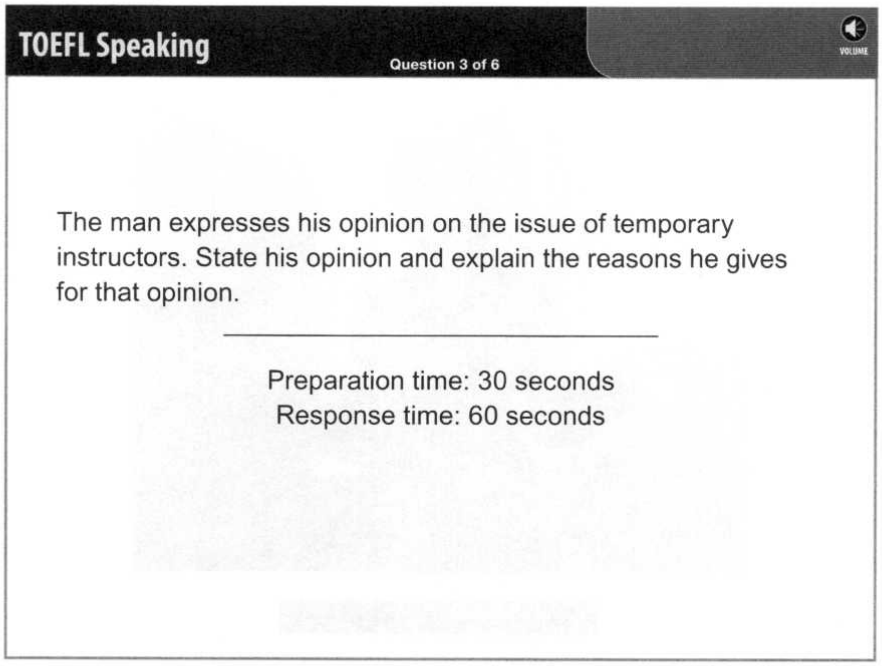
PAUSE II (for 45 seconds)



Now listen to two students as they discuss the issue brought up in the letter.



Now get ready to answer the question.



You may begin to prepare your response after the beep.

Please begin speaking after the beep.

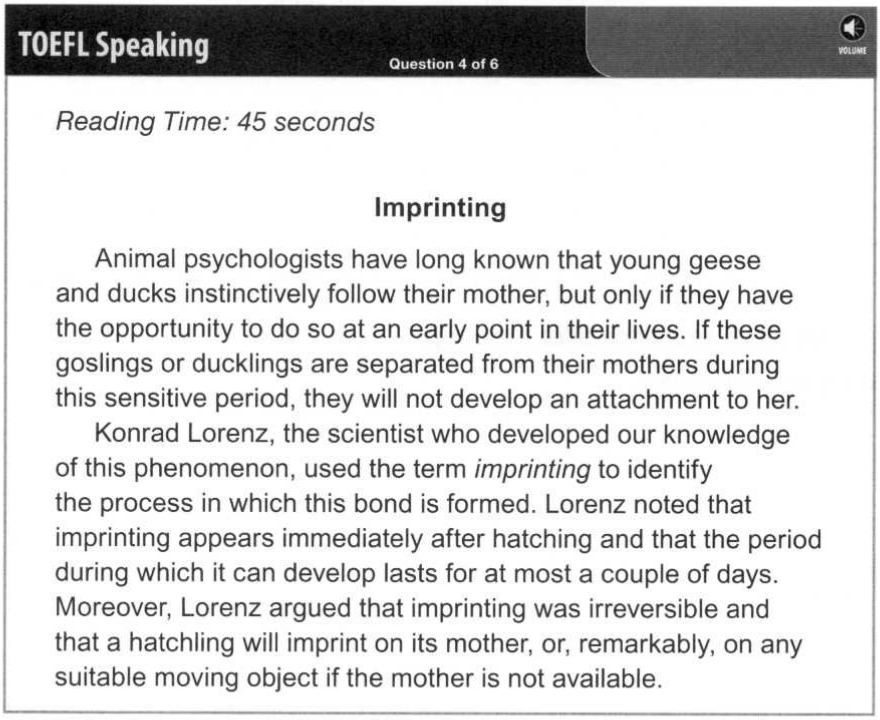
STOP ■

START ▶

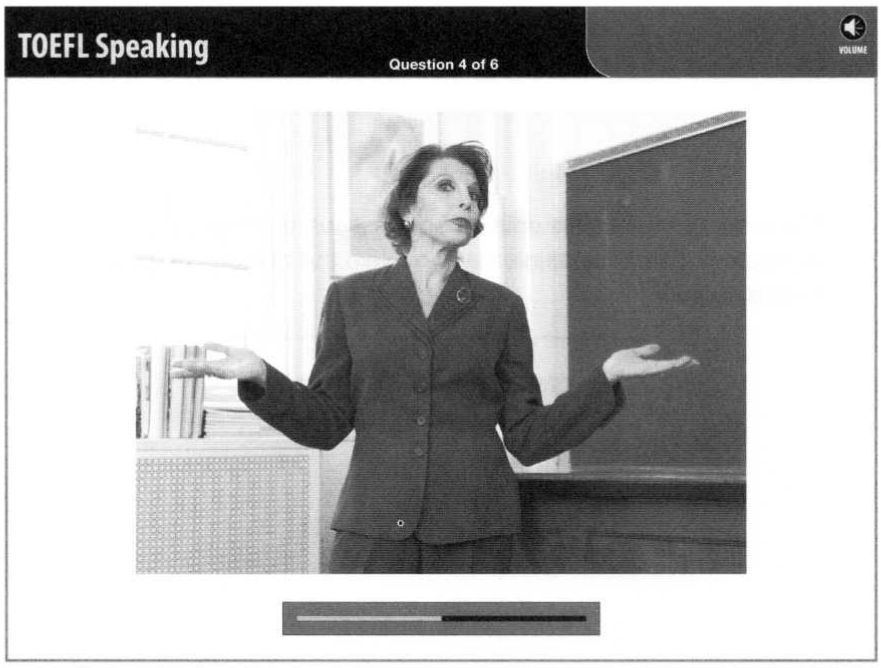
4. Please listen carefully.

Read the passage about imprinting in baby birds. You have 45 seconds to read the passage. Begin reading now.

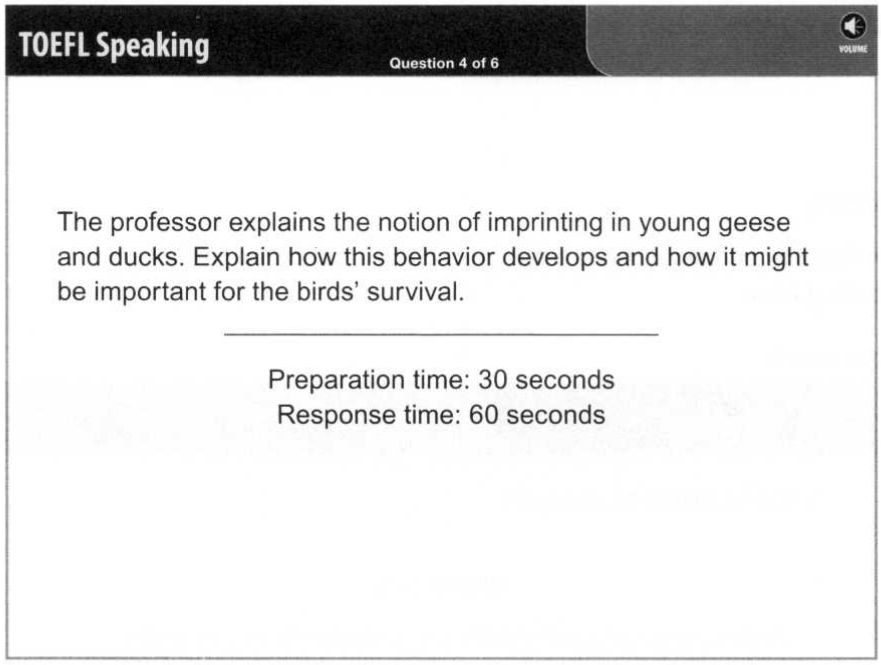
PAUSE ❚❚ (for 45 seconds)



Now listen to part of a lecture on this topic in an ecology class.



Now get ready to answer the question.



You may begin to prepare your response after the beep.

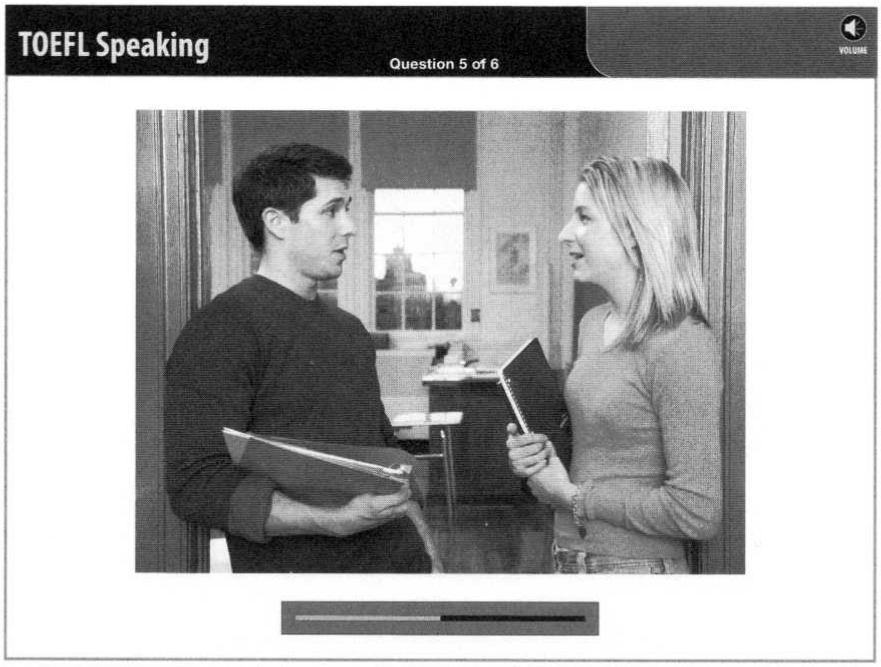
Please begin speaking after the beep.

STOP ■

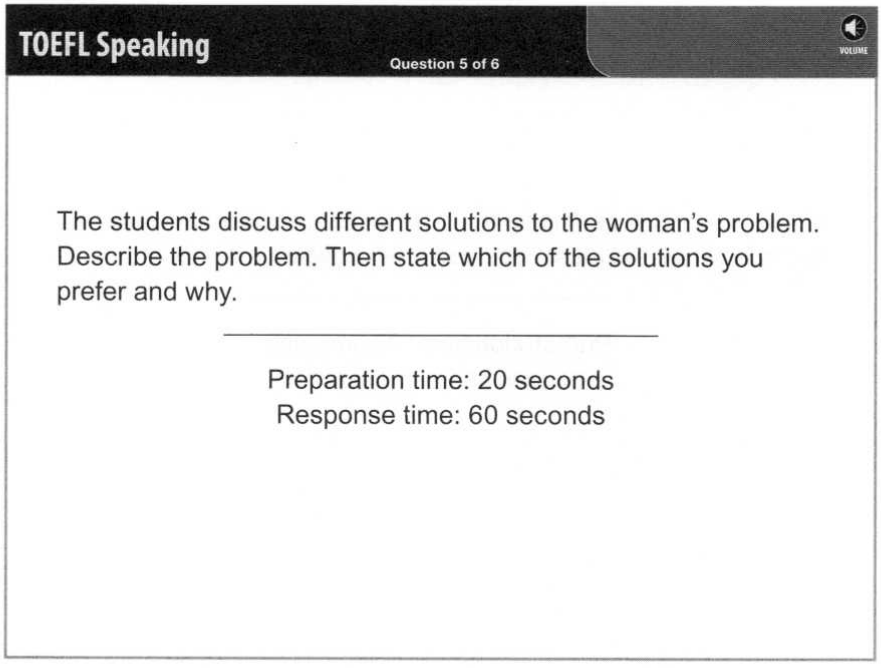
START ▶

5. Please listen carefully.

Listen to a conversation between two students.



Now get ready to answer the question.



You may begin to prepare your response after the beep.

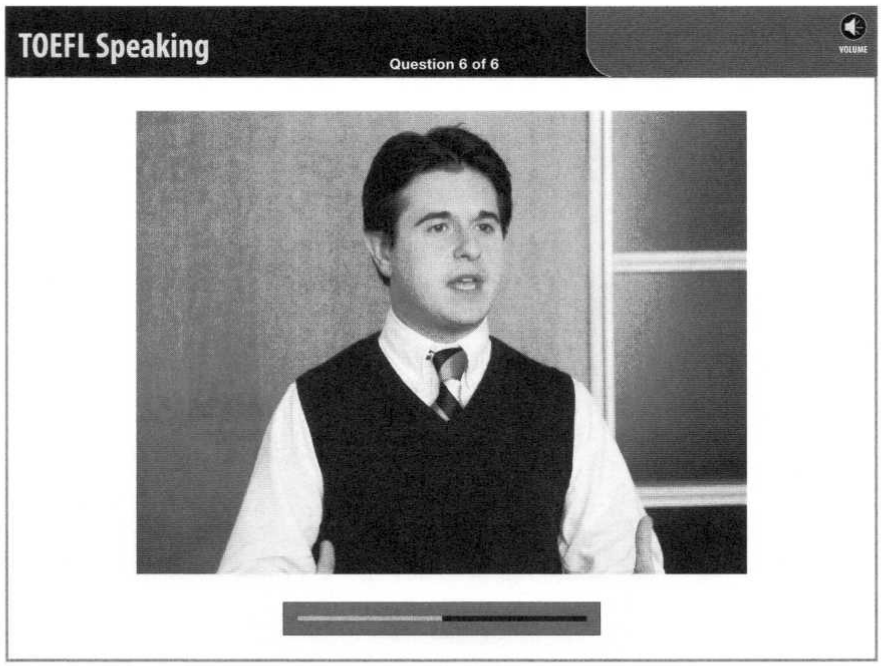
Please begin speaking after the beep.

STOP ■

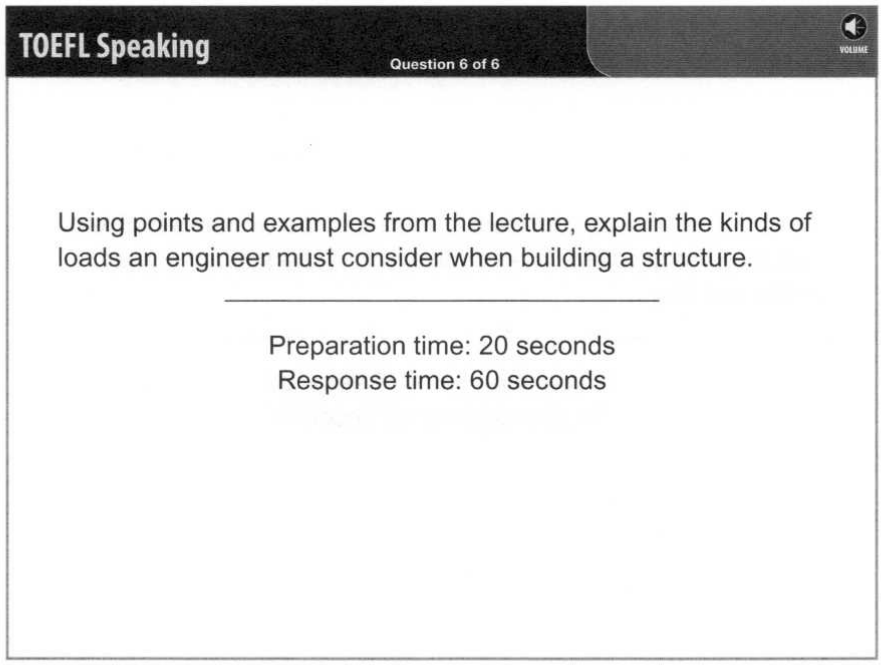
START ▶

6. Please listen carefully.

Listen to part of a lecture in an architecture class.



Now get ready to answer the question.



You may begin to prepare your response after the beep.

Please begin speaking after the beep.

STOP ■

WRITING SECTION

Directions

This section measures your ability to use writing to communicate in an academic environment. There will be two writing tasks.

For the first writing task, you will read a passage and listen to a lecture, and then answer a question based on what you have read and heard. For the second writing task, you will answer a question based on your own knowledge and experience.

Now read the directions for the first writing task.

Writing Based on Reading and Listening

Directions

For this task, you will have three minutes to read a passage about an academic topic. You may take notes on the passage while you read. Then you will listen to a lecture about the same topic. While you listen, you may also take notes.

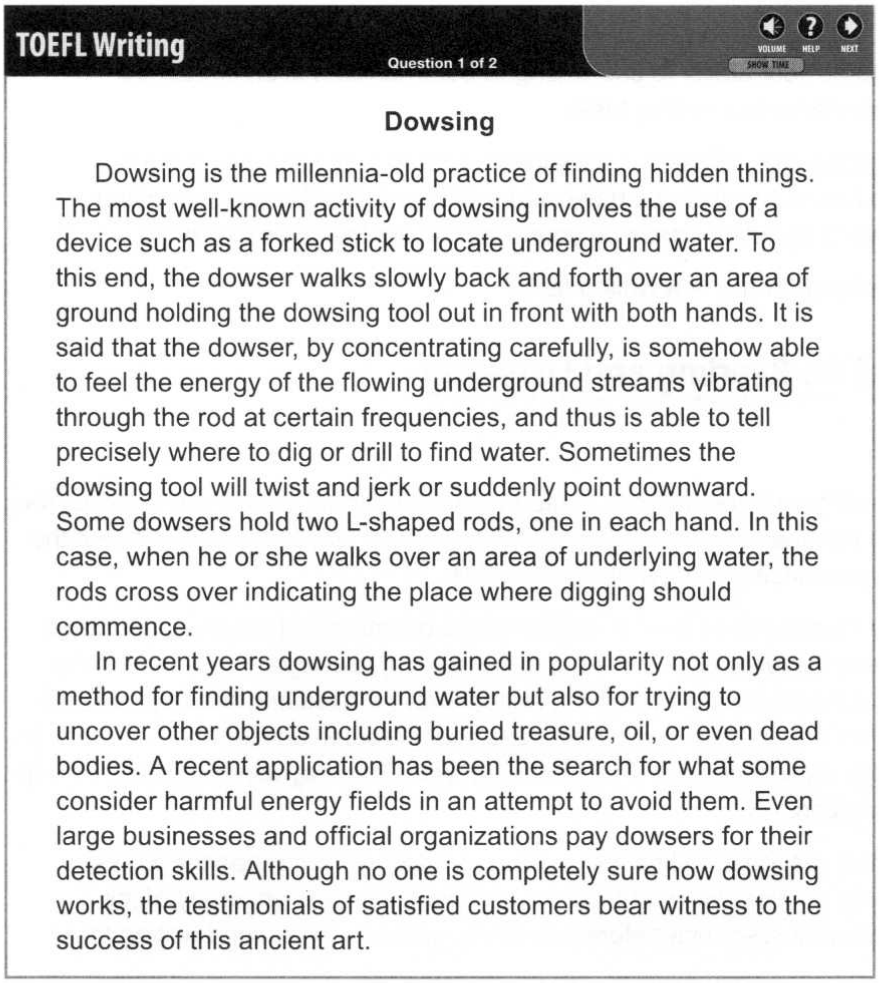
Then you will have 20 minutes to write a response to a question that asks you about the relationship between the lecture you heard and the reading passage. Try to answer the question as completely as possible using information from the reading passage and the lecture. The question does **not** ask you to express your personal opinion. You can refer to the reading passage again when it is time for you to write. You may use your notes to help you answer the question.

Typically, an effective response will be 150 to 225 words long. Your response will be judged on the quality of your writing and on the completeness and accuracy of the content. If you finish your response before time is up, go on to the second writing task.

On the day of the test, you will be required to type your response into a computer. Therefore, if you are taking this test in the book, practice typing your response on a computer.

INTEGRATED TASK

Directions: You have three minutes to read and take notes from the reading passage. Next, listen to the related lecture and take notes. Then write your response.



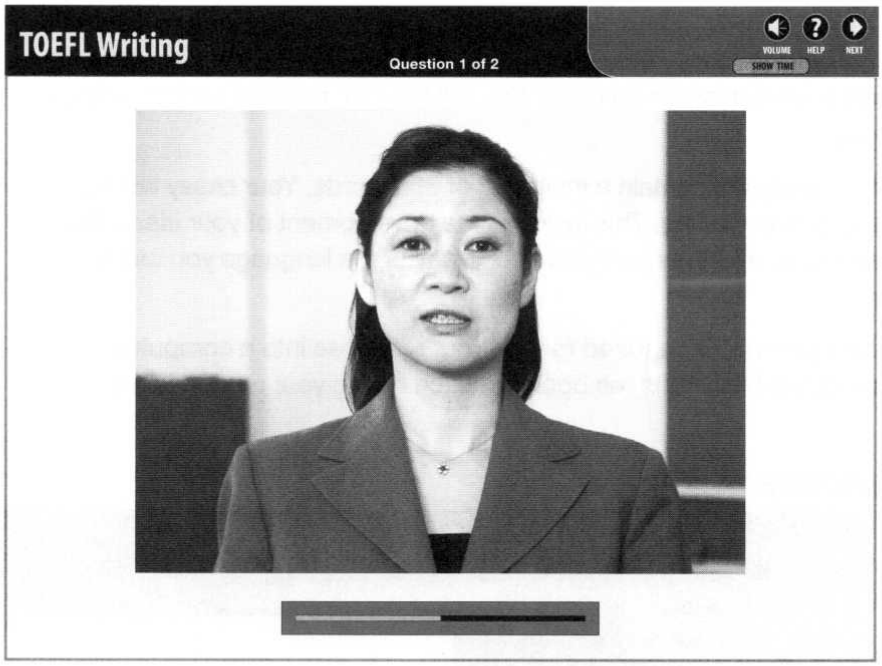
Dowsing

Dowsing is the millennia-old practice of finding hidden things. The most well-known activity of dowsing involves the use of a device such as a forked stick to locate underground water. To this end, the dowser walks slowly back and forth over an area of ground holding the dowsing tool out in front with both hands. It is said that the dowser, by concentrating carefully, is somehow able to feel the energy of the flowing underground streams vibrating through the rod at certain frequencies, and thus is able to tell precisely where to dig or drill to find water. Sometimes the dowsing tool will twist and jerk or suddenly point downward. Some dowsers hold two L-shaped rods, one in each hand. In this case, when he or she walks over an area of underlying water, the rods cross over indicating the place where digging should commence.

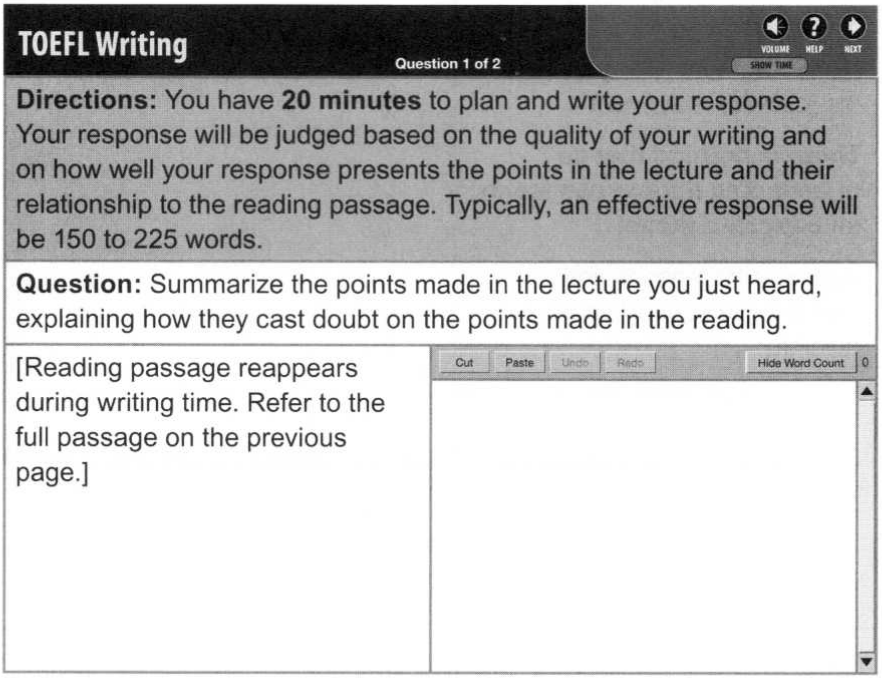
In recent years dowsing has gained in popularity not only as a method for finding underground water but also for trying to uncover other objects including buried treasure, oil, or even dead bodies. A recent application has been the search for what some consider harmful energy fields in an attempt to avoid them. Even large businesses and official organizations pay dowsers for their detection skills. Although no one is completely sure how dowsing works, the testimonials of satisfied customers bear witness to the success of this ancient art.

START ▶

Now listen to a professor's response to the reading passage.



STOP ■



Writing Based on Knowledge and Experience

Directions

For this task, you will write an essay in response to a question that asks you to state, explain, and support your opinion on an issue. You will have 30 minutes to plan, write, and revise your essay.

Typically, an effective essay will contain a minimum of 300 words. Your essay will be judged on the quality of your writing. This includes the development of your ideas, the organization of your essay, and the quality and accuracy of the language you use to express your ideas.

On the day of the test, you will be required to type your response into a computer. Therefore, if you are taking this test in the book, practice typing your response on a computer.

INDEPENDENT WRITING TASK