The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

LIVING ENVIRONMENT

Tuesday, January 20, 2026 — 1:15 to 4:15 p.m., only

Student Name _____

School Name _____

The possession or use of any communications device is strictly prohibited when taking this examination. If you have or use any communications device, no matter how briefly, your examination will be invalidated and no score will be calculated for you.

Print your name and the name of your school on the lines above.

A separate answer sheet for multiple-choice questions in Parts A, B–1, B–2, and D has been provided to you. Follow the instructions from the proctor for completing the student information on your answer sheet.

You are to answer all questions in all parts of this examination. Record your answers for all multiple-choice questions, including those in Parts B–2 and D, on the separate answer sheet. Record your answers for all open-ended questions directly in this examination booklet. All answers in this examination booklet should be written in pen, except for graphs and drawings, which should be done in pencil. You may use scrap paper to work out the answers to the questions, but be sure to record all your answers on the answer sheet or in this examination booklet as directed.

When you have completed the examination, you must sign the declaration printed on your separate answer sheet, indicating that you had no unlawful knowledge of the questions or answers prior to the examination and that you have neither given nor received assistance in answering any of the questions during the examination. Your answer sheet cannot be accepted if you fail to sign this declaration.

Notice …

A four-function or scientific calculator must be available for you to use while taking this examination.

DO NOT OPEN THIS EXAMINATION BOOKLET UNTIL THE SIGNAL IS GIVEN.

Part A

Answer all questions in this part. [30]

Directions (1–30): For *each* statement or question, record on the separate answer sheet the *number* of the word or expression that, of those given, best completes the statement or answers the question.

1 Genetic information stored in DNA is most directly used to

(1) synthesize new fats
(2) digest complex carbohydrates
(3) produce specific proteins
(4) metabolize starch molecules

2 An example of a pattern of behavior that evolved through natural selection is

(1) a male peacock displaying its tail and dancing to attract a female peacock
(2) mushrooms growing on a decaying log on the forest floor
(3) zebra mussels competing with native species for food in the Great Lakes
(4) raccoons returning to a garbage can in which they had previously found scraps of food

3 In order for large food molecules to pass across a cell membrane, they must be broken down into their building blocks. Which row in the chart below correctly pairs a large organic food molecule with its building blocks?

Row	Large Molecule	Building Blocks
(1)	starches	proteins
(2)	amino acids	fats
(3)	proteins	amino acids
(4)	sugars	starches

4 Carbon dioxide absorbed from the atmosphere into the oceans increases acid levels and threatens the survival of many marine organisms. Which human activity could slow the increasing acidity of the ocean?

(1) Reduce the burning of fossil fuels.
(2) Decrease protection of the ozone shield.
(3) Create preserves in ocean regions to stop overfishing.
(4) Regulate the disposal of plastics in the ocean.

5 Enzymes are similar to hormones in that they both

(1) affect every cell in the same way
(2) function only in acidic environments
(3) have specific shapes that influence how they function
(4) can be used to cut, copy, and move molecules

6 The U.S. imports many products from other countries. As more goods are transported into the United States, the risk of invasive organisms arriving with them greatly increases. Any invasive organisms that enter a new area would most likely

(1) alter inheritable traits of organisms
(2) decrease infinite resources
(3) increase ecological succession
(4) disrupt an ecosystem's stability

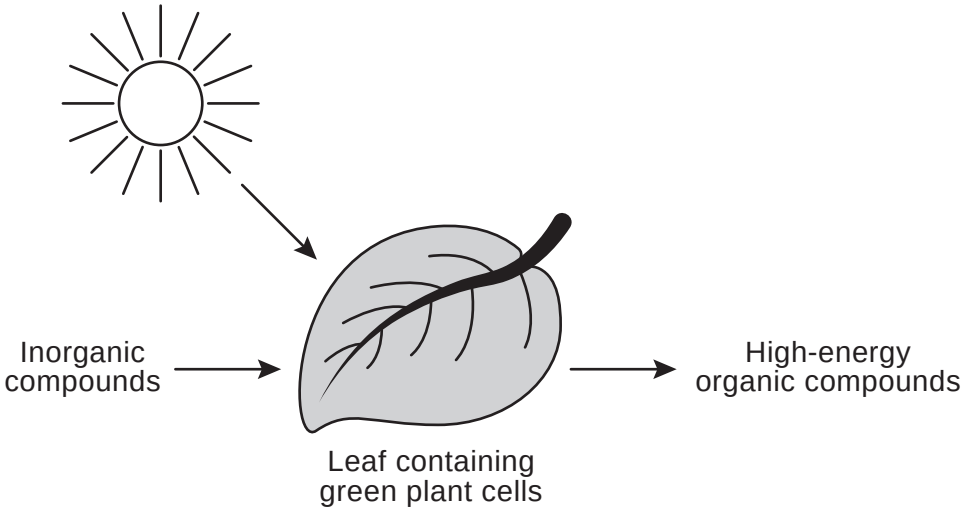
7 Several human genetic disorders are caused when a zygote has one extra chromosome. This can occur as a result of

(1) meiosis forming a zygote that has one extra chromosome
(2) meiosis forming a gamete with one extra chromosome
(3) mitosis forming a zygote that has one extra chromosome
(4) mitosis forming a gamete with one extra chromosome

8 The variety of environments found around the world is the result of the

(1) action of many kinds of predators
(2) evolution of plant species
(3) extinction of animal species
(4) diversity of physical conditions

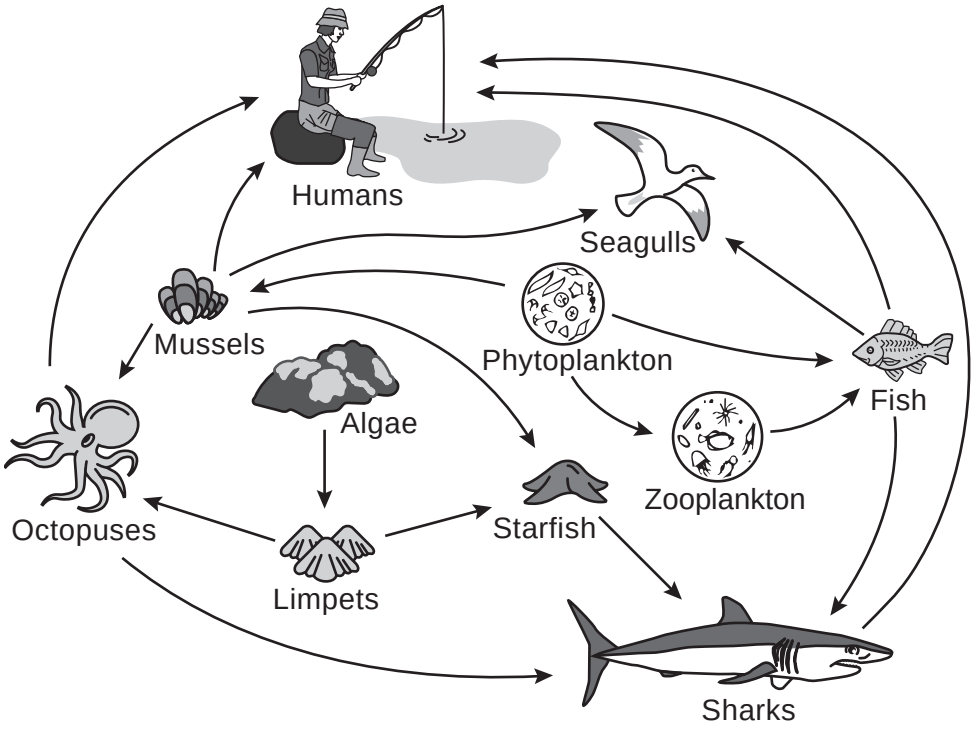
9 The diagram below represents a process used by plants to produce high-energy organic compounds.



The inorganic compounds used by the green plant cells in this process are

(1) oxygen and water
(2) glucose and carbon dioxide
(3) carbon dioxide and water
(4) glucose and oxygen

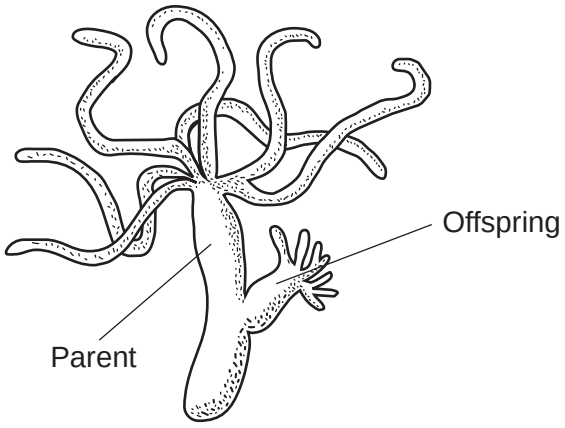
10 The model below represents an aquatic food web.



Examples of producers in this aquatic food web include

(1) humans and octopuses
(2) algae and phytoplankton
(3) limpets and mussels
(4) seagulls and sharks

11 The diagram below illustrates a form of asexual reproduction in hydras.



Which statement best describes how the genetic information in the cells of the hydra parent compares to the genetic information in the cells of the offspring?

(1) The genes in the offspring cells are identical to the genes of the parent cells.
(2) The offspring cells contain half the genetic information of the parent cells.
(3) The offspring cells have twice the genetic information of the parent cells.
(4) The genes in the offspring cells are different from the genes of the parent cells.

12 A professor from Montana State University described some of the changes observed in the Greater Yellowstone ecosystem. He said, "… changes in land use and climate have reduced snow pack and stream flows, increased stream temperatures, favored pest outbreaks and forest die-off, fragmented habitat types, expanded invasive species, and reduced native fish populations."

The most likely cause of the changes described is

(1) excessive predation of fish by large animals such as the bears native to the area
(2) human activities that deliberately or inadvertently altered the equilibrium of the ecosystem
(3) direct harvesting of certain animals as part of a well-controlled population management program
(4) a naturally occurring cooling trend that kept mountain snow from melting and affecting stream flow

13 Red meat is not harmful to most people. However, some people develop a reaction that affects their ability to breathe when they eat red meat. This response to red meat is known as

(1) an allergy
(2) a stimulus
(3) an infection
(4) an adaptation

14 Antibiotic resistance has become a serious problem, especially in the control of bacterial diseases that infect people and farm animals. A certain bacterium is resistant to an antibiotic.

This resistance could be due to

(1) changes that occur in the antibiotic before it makes contact with the bacterium
(2) changes that occurred in the genetic material of the bacterium
(3) the use of a new antibiotic to destroy the bacterium
(4) the use of a new vaccine to prevent the genetic material from being mutated by the bacterium

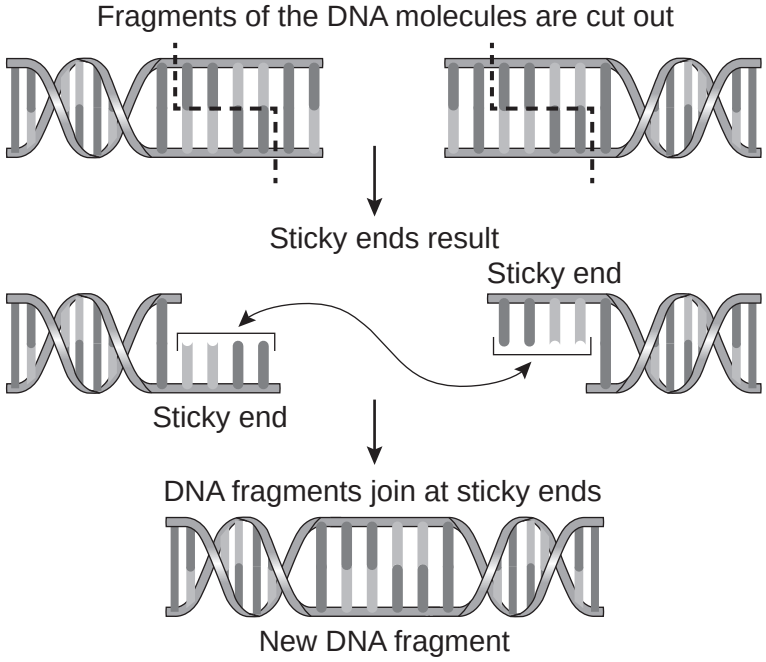
15 Which statement describes a characteristic of the human reproductive system?

(1) The testes produce sperm cells that contain twice as much DNA as body cells.
(2) The placenta provides oxygen and nutrients to a developing fetus.
(3) The ovary produces cells that form an embryo that divides by meiosis.
(4) Egg cells contain a full set of chromosomes that will develop into an embryo through differentiation.

16 An individual with a high blood glucose level may have headaches, blurred vision, and fatigue. Which substance would most likely help to reduce these symptoms?

(1) estrogen
(2) a specific antigen
(3) a digestive enzyme
(4) insulin

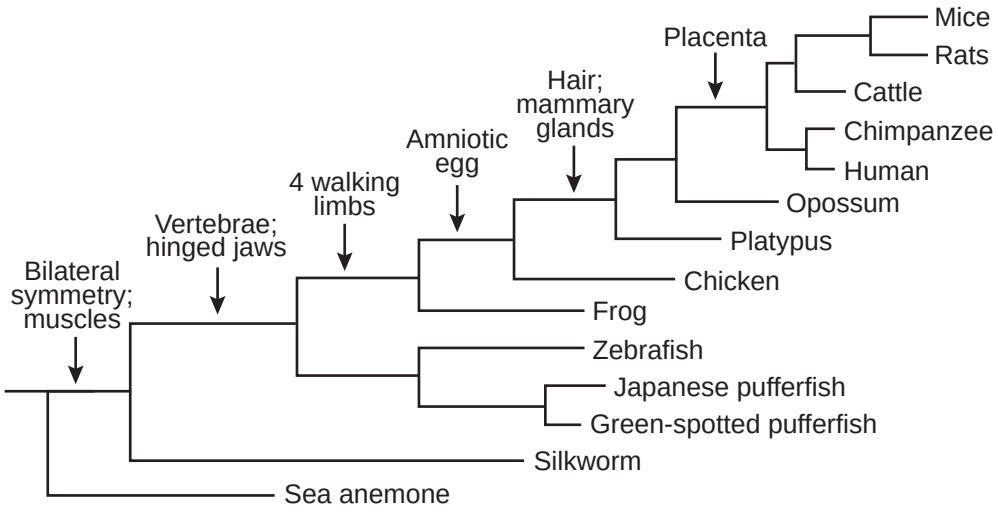
17 The diagram below illustrates how two DNA segments can be joined to form a DNA segment with a new genetic sequence.



This procedure is an example of a process known as

(1) DNA cloning
(2) genetic expression
(3) genetic engineering
(4) DNA replication

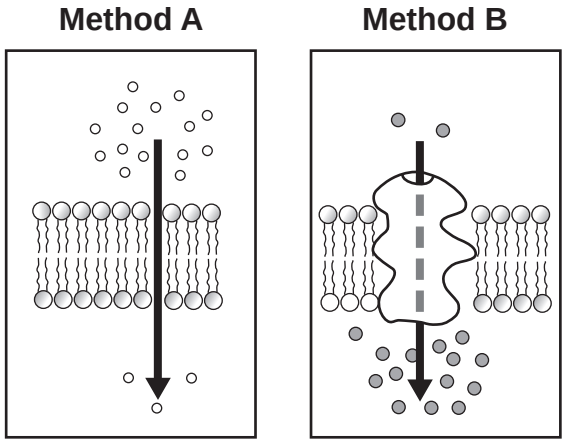
18 The diagram below represents an evolutionary tree. The arrows indicate some of the newly evolved traits in that particular branch.



Which claim is supported by the evolutionary tree?

(1) Rats have a placenta, but do not have mammary glands.
(2) Chickens have amniotic eggs, but frogs do not.
(3) Fish do not have vertebrae, but mice and opossums do.
(4) Sea anemones have bilateral symmetry and muscles, but silkworms do not.

19 The diagram below represents two methods of transport through a cell membrane.



Which method illustrates molecules moving by diffusion?

(1) Method *A*, only
(2) Method *B*, only
(3) either Method *A* or Method *B*
(4) neither Method *A* nor Method *B*

20 *Serratia marcescens* is a species of bacteria that is red at 25°C and white when the temperature is 37°C. The most probable explanation for this is that

(1) lower temperatures alter the base sequences of proteins that code for color in the bacteria
(2) factors in the environment influence gene expression in these bacteria
(3) pigment molecules influence environmental factors in which bacteria grow
(4) hormone activity in the bacteria is directly proportional to available nutrients

21 Scientists have found many similarities in specific organic compounds of raccoons and bears. These similarities suggest that raccoons and bears have

(1) stopped evolving
(2) a common ancestor
(3) identical DNA
(4) the same number of chromosomes

22 Two chemical substances that play a direct role in the regulation of the female reproductive system are

(1) progesterone and estrogen
(2) progesterone and glucose
(3) estrogen and starch
(4) glucose and testosterone

23 Although widespread forest fires occur in the Amazon during the summer dry season, the number of fires in 2019 was almost three times the number in 2018. Many of the fires were started to clear land for farming. These fires attracted global concern because

(1) setting fires replaced direct harvesting as an important method for obtaining wood in the Amazon
(2) areas where forests are destroyed by fire can no longer support any plant life
(3) they increased deforestation, accelerating atmospheric changes that threatened world-wide environments
(4) the increased farming decreased the amount of carbon dioxide available for plants

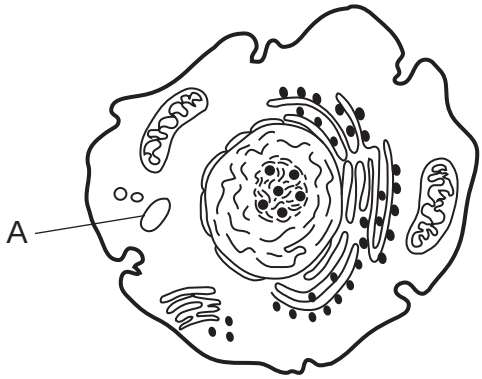
24 The pH of a lake occupied by a population of fish suddenly decreases. Most of the fish die, but a few survive. Which statement regarding the survivors is true?

(1) Only large fish survived when the pH level in the water dropped.
(2) The surviving fish were able to change their DNA in response to the change in pH.
(3) The fish that survived were able to produce chemicals that returned the pH of the lake to normal levels.
(4) The survivors already had genetic differences that made them better suited to the lower pH of the water.

25 The most likely explanation for a lack of competition among three different bird species inhabiting the same species of trees in an ecosystem is that

(1) there is a limited food supply
(2) they occupy separate niches
(3) they eat similar insects that live in the trees
(4) they use the same nesting materials

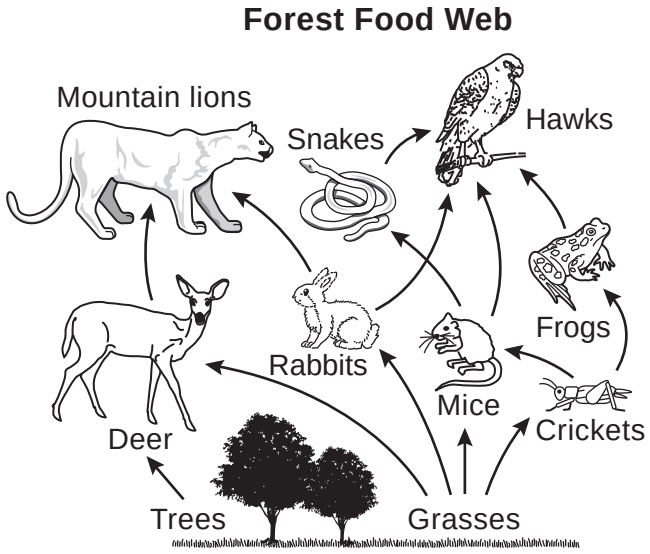
26 The diagram below represents an animal cell that has been greatly magnified.



The structure labeled *A* is surrounded by a membrane and may be seen using a compound light microscope. Structure *A* is most likely a

(1) chloroplast that releases glucose
(2) mitochondrion that releases oxygen
(3) ribosome that stores sugars and fats
(4) vacuole that stores cellular products

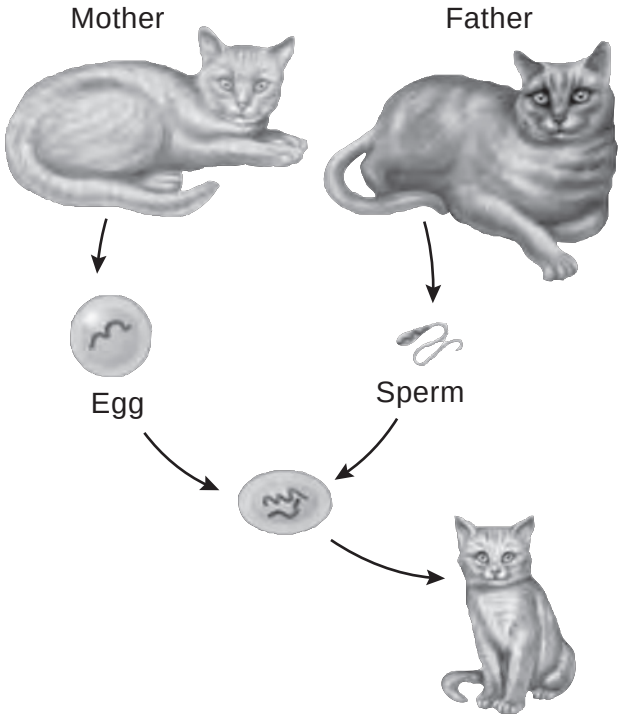
27 A forest food web is shown below.



Which organism occupies a feeding level that receives a larger percentage of the energy captured by the producers than the feeding level occupied by the snakes?

(1) frogs
(2) hawks
(3) rabbits
(4) mountain lions

28 The diagram below illustrates a series of processes that occur during sexual reproduction.



Which sequence of events occurs after the formation of the zygote?

(1) development ⟶ birth ⟶ aging
(2) meiosis ⟶ birth ⟶ aging
(3) aging ⟶ birth ⟶ meiosis
(4) mitosis ⟶ fertilization ⟶ development

29 In a food web, the herbivores are most directly dependent on the types of

(1) heterotrophs
(2) autotrophs
(3) decomposers
(4) predators

30 Which statement best describes how a group of specialized cells could interact?

(1) Organelles could work together to form an organ.
(2) Tissues could work together to form an organ.
(3) Organs could work together to form a tissue.
(4) Cells could work together to form an organelle.

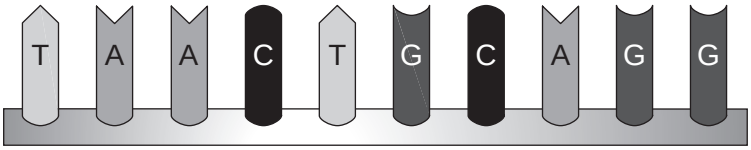
Part B–1

Answer all questions in this part. [13]

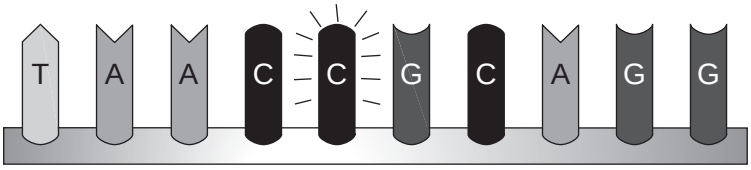
Directions (31–43): For *each* statement or question, record on the separate answer sheet the *number* of the word or expression that, of those given, best completes the statement or answers the question.

31 The diagram below represents a sequence of DNA in a human body cell, before and after a point mutation occurs.

Before: Original Sequence



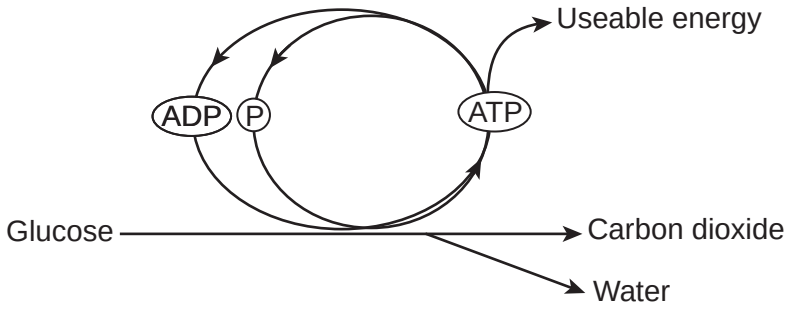
After: Point Mutation of Original Sequence



A single point mutation in one base of a DNA sequence may have a direct effect on the

(1) sequence of amino acids it produces
(2) sequence of simple sugars it produces
(3) type of carbohydrates needed
(4) type of ribosomes in a cell

32 The diagram below represents a process that takes place in the mitochondrion.

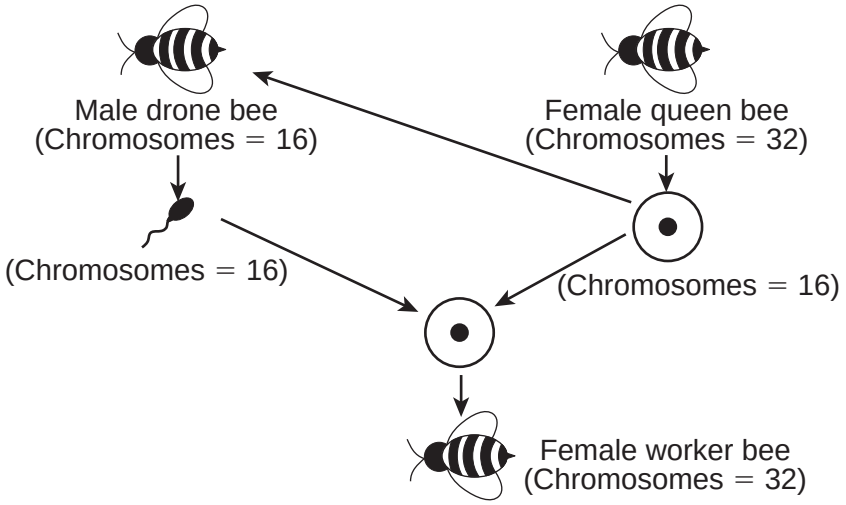


The main purpose of this process is to supply the cell with

(1) useable energy
(2) glucose
(3) carbon dioxide
(4) water

Base your answers to questions 33 and 34 on the information and diagram below and on your knowledge of biology.

Bees have complex genetics. Male drone bees result from the development of unfertilized eggs from the queen bee. Female worker bees result from fertilization. A model of bee genetics is shown below:



33 What evidence would support the claim that female bees result from fertilization?

(1) All female bees in the hive have the same DNA.
(2) Only female bees contain a full set of chromosomes.
(3) Male bees are produced in larger numbers.
(4) Female bees only have genes from the queen bee.

34 At one time, people thought that all male drone bees produced by the queen were genetically identical. However, after analyzing the DNA from the male drone bees, scientists determined that drones are not identical.

Which explanation provides the best reasoning for why male bees are *not* genetically identical?

(1) Male bees are produced through the union of egg and sperm.
(2) Male bees are produced asexually, which leads to greater genetic diversity.
(3) All male bees have 16 chromosomes that contain 32 different genes.
(4) The eggs used to produce male bees contain different combinations of chromosomes.

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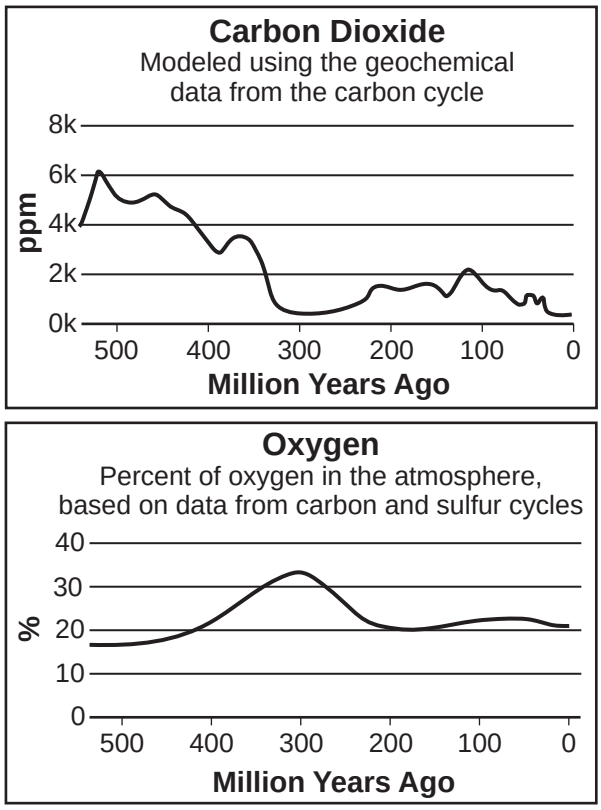
35 Why should an explanation about a scientific phenomenon developed by one scientist be rejected by another scientist?

(1) The original scientist had less funding to support his research than the other scientist.
(2) The original scientist conducted multiple trials and had his work peer-reviewed.
(3) The explanation of the phenomenon is not consistent with additional experimental and observational evidence.
(4) The data used to support the explanation were obtained using both conventional and invented methods.

36 The two graphs below show trends in the relative amounts of oxygen and carbon dioxide present in Earth's atmosphere over millions of years.

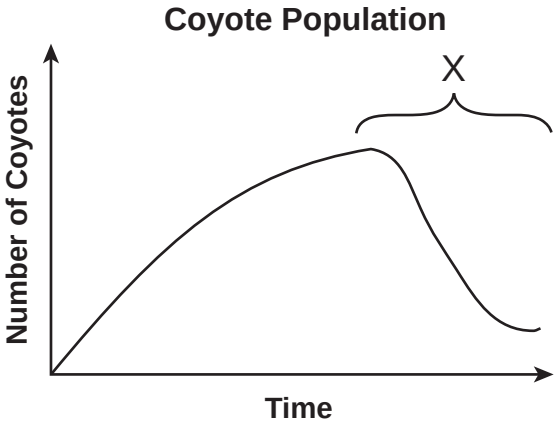


Events that most likely resulted in the relative amounts of oxygen and carbon dioxide present in Earth's atmosphere around 300 million years ago were

(1) the evolution of reptiles and herbivorous mammals
(2) the evolution of decomposers and consumers
(3) a sudden increase in the diversity of organisms in Earth's oceans
(4) an increase in the diversity and size of populations of autotrophs

Base your answers to questions 37 and 38 on the graph and information below and on your knowledge of biology

The graph shows the population of coyotes in an environment over a period of several years. Rabbits and mice are the main food sources of coyotes.



37 Before period *X*, the coyote population most likely increased due to

(1) more competition for more resources
(2) a high birth rate with limited resources
(3) a low birth rate with unlimited resources
(4) limited competition for unlimited resources

38 Which statement best explains what may have occurred at *X*?

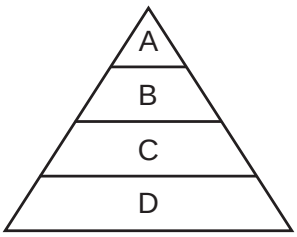
(1) A mild winter allowed more mice and rabbits to survive.
(2) A disease caused a decrease in the rabbit population.
(3) The coyotes found a new food source.
(4) The rabbits competed more successfully for food than the mice.

Base your answers to questions 39 through 41 on the diagram, chart, and information below and on your knowledge of biology

Overfishing

An old saying, "There are always more fish in the sea," may not be true in the future. Many fish species, including sharks, are nearing extinction due to overfishing. Overfishing is defined as the practice of catching fish faster than their populations can be sustained. When sharks are overfished, their prey, which includes tuna, increase in number. This might seem good, since many people like to eat tuna. When tuna are overfished, populations of their prey, smaller fish that feed on plants and algae, grow uncontrolled.

The diagram below represents an energy pyramid.



39 Based on the reading passage, which row in the chart below best completes the energy pyramid that includes the following organisms: tuna, algae, shark, and small fish?

Row	Level A	Level B	Level C	Level D
(1)	shark	algae	small fish	tuna
(2)	shark	tuna	small fish	algae
(3)	small fish	algae	shark	tuna
(4)	algae	small fish	tuna	shark

Most commercial fishermen use nets. Many types of nets do not distinguish between the species of fish they are meant to catch and other fish they are not seeking. New technologies have enabled fishing boats to move from coastal areas to deeper ocean water. This allows them to continue to catch fish.

40 A description of an important trade-off associated with the use of nets and fishing technology by fishermen includes the fact that

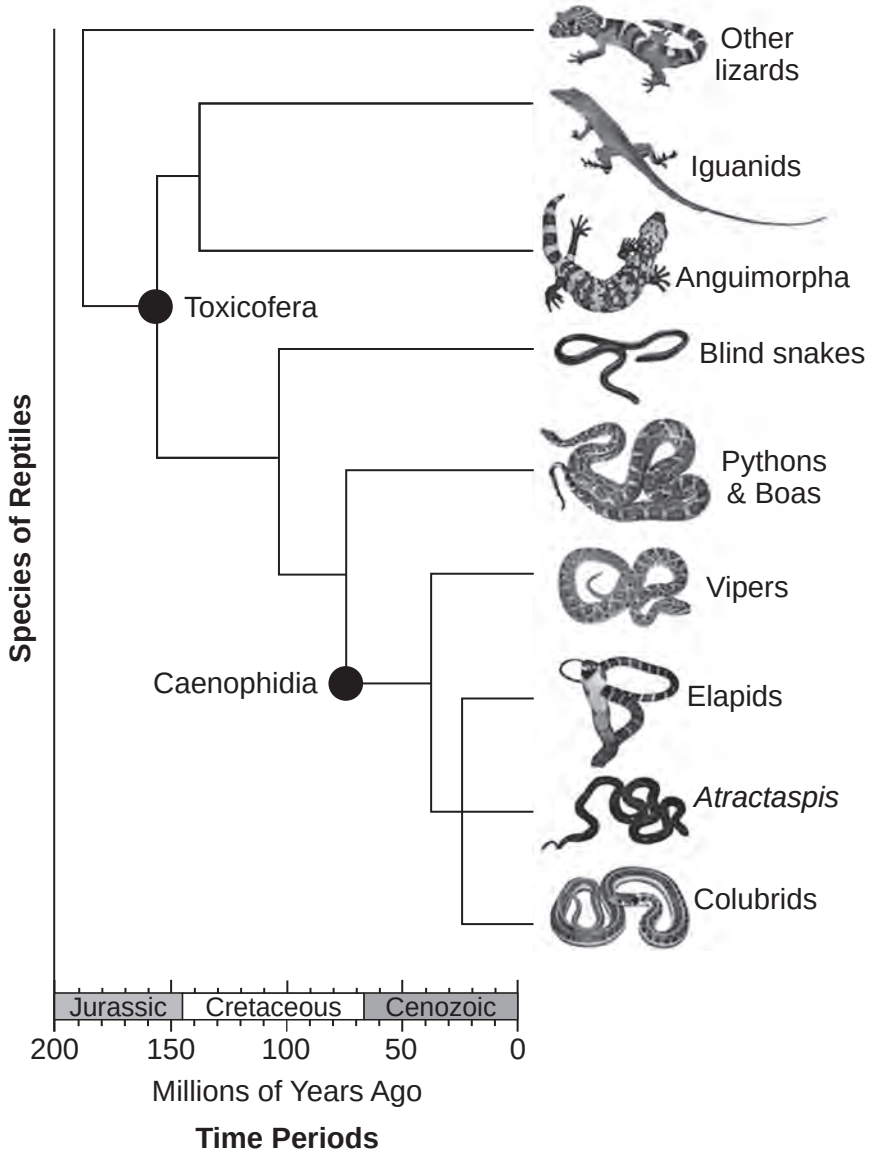
(1) many fish can be caught at one time but fish that are not meant to be caught are often killed
(2) using nets is efficient, and many fish can be caught at one time
(3) some fish that are not intended to be caught are killed, and some are in danger of extinction
(4) when fish become abundant, fishermen can go out farther in the ocean to catch them

41 Some scientists claim that overfishing is disrupting ocean food webs. Evidence that best supports this claim is that

(1) there are fewer top predators that maintain small fish populations at appropriate levels
(2) there are fewer small fish that consume the plants necessary for other ocean species
(3) fish that rely on plants change their diet to one that includes only other animals
(4) because of less competition, plants that once grew on land are now growing in the ocean

Base your answer to question 42 on the information and diagram below and on your knowledge of biology.

Research has shown that snake venoms have evolved from proteins present in their saliva. The diagram below shows a phylogenetic tree of lizard and snake relationships over time. Toxicofera is a classification group containing all snakes and some lizards, and Caenophidia is a group that includes all venomous snakes.



42 Which snakes would most likely have a gene sequence for a venom protein that is most similar to an elapid snake?

(1) vipers
(2) blind snakes
(3) pythons
(4) colubrids

Protein Value in Pollen

Native bee species and honeybees rely on flowering plants for energy and nutrition. The pollen they collect and eat is essential for their development and helps them to maintain immunity to pathogens and parasites. While collecting pollen, bees provide humans with a valuable service. They pollinate more than 15 billion dollars in crops each year.

In addition to the bees being threatened by pesticides, studies have shown that the overall protein concentration of pollen is decreasing. This is thought to be due to increased levels of carbon dioxide (CO_2) in the atmosphere and a corresponding increase in the rate of photosynthesis. Data that support this claim show a great drop in pollen protein occurred between 1960-2014, a time when atmospheric carbon dioxide levels rose dramatically.

43 The increase in atmospheric carbon dioxide potentially causing a *decrease* in pollen protein concentration is an example of how

(1) the nutritional value of food is increased as a result of an increase in atmospheric carbon dioxide
(2) changes caused by humans can negatively affect ecosystem stability
(3) as carbon dioxide levels increase, the use of pesticides can increase the number of bees pollinating crops
(4) natural selection can increase protein concentration in pollen

Part B–2

Answer all questions in this part. [12]

Directions (44–55): For those questions that are multiple choice, record on the separate answer sheet the *number* of the choice that, of those given, best completes each statement or answers each question. For all other questions in this part, follow the directions given and record your answers in the spaces provided in this examination booklet.

Base your answers to questions 44 through 49 on the information and data table below and on your knowledge of biology.

The Dangers of Vaping

According to the CDC, the use of e-cigarettes among adolescents is on the rise. When adolescents in grades 9-12 were asked if they had used e-cigarettes in the past 30 days, 1.5% of adolescents in 2011 said they had. In 2018, 20.8% said they had.

Many e-liquids used in vaping devices contain nicotine as well as exotic flavorings, which often appeal to younger individuals. While these flavorings have been approved for use in foods that are ingested, their safety when inhaled hasn't been evaluated.

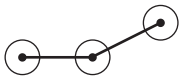
Research indicates that certain flavorings may increase the risks associated with vaping by impacting the ability of individuals to fight respiratory infections. The cells that line the respiratory tract have cilia that sweep mucus with inhaled particles and pathogens up toward the throat that keeps them out of the lungs. This provides a barrier against respiratory infection. A study was done to determine the effect of cinnamon flavoring, found in many best-selling e-liquids, on the functions of cilia. As part of the study, respiratory tract cells were exposed to different concentrations of cinnamon flavoring, and the frequency of cilia beating was measured. The results are shown in the table below.

Concentration of Cinnamon Flavoring (mM)	**Cilia-Beating Frequency** (Hertz)
0	700
1	650
5	500
10	75
15	25

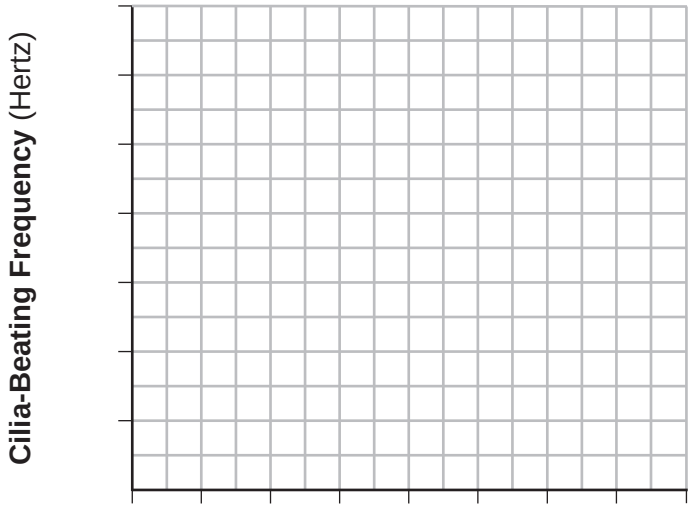
Directions (44–45): Using the information in the data table, construct a line graph on the grid provided, following the directions below.

44 Mark an appropriate scale, without any breaks in the data, on each labeled axis. [1]

45 Plot the data on the grid provided. Connect the points and surround each point with a small circle. [1]

Example: 

Cilia Function at Different Cinnamon Flavoring Concentrations



46 State the relationship between cilia function and concentration of cinnamon flavoring. [1]

Note: The answer to question 47 should be recorded on your separate answer sheet.

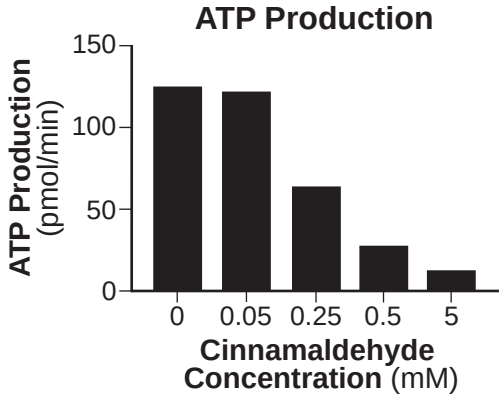
47 When conducting this experiment, the researchers used nicotine-free cinnamon flavored e-liquids. This was most likely done in order to

(1) test just one variable in the experiment
(2) decrease the validity of the experiment
(3) increase the effects of the dependent variable
(4) be able to repeat the experiment a few times

48 Explain why using cinnamon-flavored e-cigarettes may increase a person's risk for lung infection. Use evidence from the information provided to support your answer. [1]

Note: The answer to question 49 should be recorded on your separate answer sheet.

49 Another experiment within this study looked at ATP production by the respiratory tract cells at different cinnamon flavoring (cinnamaldehyde) concentrations. The results are shown in the graph below.



These results suggest that at higher concentrations of the flavoring, the respiratory tract cells may be using

(1) more carbon dioxide
(2) less carbon dioxide
(3) less oxygen
(4) more oxygen

Base your answers to questions 50 and 51 on the information below and on your knowledge of biology.

Vaccine in Genetically Modified (GM) Bananas Could Wipe Out Hepatitis B

Bananas have been genetically modified to contain a hepatitis B vaccine. The virus attacks the liver and can lead to liver cancer. It has been demonstrated that it is possible to produce a cheap, stable vaccine by genetically modifying certain plants.

A gene that codes for a specific protein on the surface of the hepatitis B virus is transferred into a banana plant. In the plant, thousands of copies of the protein are produced. When the banana is eaten, the protein passes into the intestine, where the immune system produces antibodies against hepatitis B. These antibodies work the same way as antibodies produced in response to an injected vaccine.

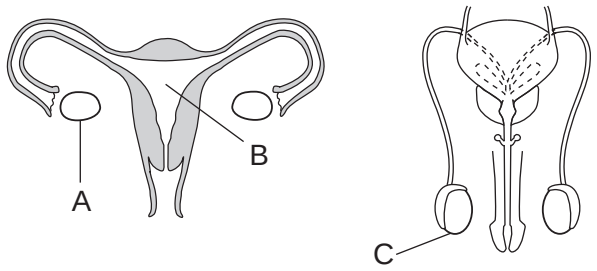
Note: The answer to question 50 should be recorded on your separate answer sheet.

50 Which statement best describes how the immune system responds when the protein in the genetically modified banana enters the intestine?

(1) Immune cells detect the protein as foreign and launch antigens against it.
(2) Red blood cells detect the protein and destroy it.
(3) The protein is detected, and antibodies are formed against it.
(4) Immune cells in the liver take in the protein and use it to destroy the virus.

51 Describe *one* advantage of using bananas that have been genetically modified to combat hepatitis B in place of an injected vaccine. [1]

Base your answers to questions 52 and 53 on the diagram below and on your knowledge of biology. The diagram shows some organs of the male and female reproductive systems.



52 Organ *A* and organ *C* both have similar functions, even though one is present in females and the other is present in males. Describe *one* function carried out by both *A* and *C*. [1]

53 Describe the function of *B* in reproduction. [1]

Base your answers to questions 54 and 55 on the information below and on your knowledge of biology.

Erythropoietin (EPO) is a hormone produced by special cells in the kidney that affects the production of red blood cells in the bone marrow. The table below shows the normal response of the kidneys to oxygen levels in regard to EPO.

Response of Kidneys to Oxygen Levels

Step 1 →	Step 2 →	Step 3 →	Step 4 →	Step 5
Low oxygen levels in blood recognized by specialized kidney cells	Kidney cells produce and release EPO hormone into the blood	Increase in EPO results in an increase in production of red blood cells in bone marrow	Increase in red blood cells results in an increase in blood oxygen levels	EPO levels decrease to normal level

54 Explain how the body's response to low oxygen levels is an example of a feedback mechanism. [1]

55 Explain how homeostasis will be affected if a person's kidney cells do *not* produce sufficient EPO. [1]

Part C

Answer all questions in this part. [17]

Directions (56–72): Record your answers in the spaces provided in this examination booklet.

Base your answers to questions 56 and 57 on the information below and on your knowledge of biology.

Can Pigs Become a Source of Organs for Human Transplants?

There is a chronic shortage of organs for people in need of transplants. Pigs might serve as possible donors, since many pig organs are similar in size, structure, and function to human organs. Evidence shows that transplanted donor organs could lead to organ rejection and death without anti-rejection medication.

In order to avoid this organ rejection, scientists have recently modified the genetic code of selected pigs. A newer technology called CRISPR was used to disable retroviruses embedded in the genetic makeup of pigs. These retroviruses could be harmful to humans. Many additional pig genes were also altered to shut down factors that could cause a rejection response in human transplant recipients.

56 Explain why it is necessary to genetically modify the pigs before using their organs for human transplant. [1]

57 After a history of unsuccessful efforts, the first long-term successful kidney transplants were performed between human twins that developed from the same zygote. Explain the reason why organ rejection concerns were much less between twins than using organs from pigs. [1]

Base your answers to questions 58 and 59 on the information and photo below and on your knowledge of biology.

Western Rock Pocket Mice

Scientists studied the distribution of a species of pocket mouse that lives in desert regions of the southwestern United States. At night, the mice feed on seeds and grasses. A single female mouse can reproduce several times each year, producing a litter of 3 to 13 offspring each time. Dark mice may be found in a population of tan mice with a frequency of about 1 for every 100,000 births. Most of the fur color genes are identical, but dark and tan rock pocket mice differ in one gene. They have different forms (alleles) of the MC1R gene for fur color.

Mice with different fur colors do not show a preference for the background color of the area in which they live. Examine the chart below. It provides data on the frequency of fur color and the soil color where different populations of rock pocket mice live.

Western U.S. Rock Pocket Mouse Populations

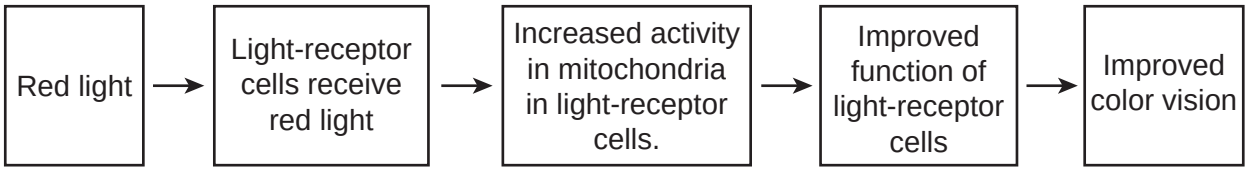
Population Location	Christmas Pass	Tule Well	Lava (Mid)	Lava (East)	O'Neill Pass
Soil Color	light	light	dark	dark	light
Number of Tan Mice	6	80	0	3	34
Number of Dark Mice	0	5	5	42	43
Total Number of Mice	6	85	5	45	77
Percentage of Tan Mice	100%	94%	0%	7%	44%

58 Identify which population location has the greatest diversity in fur color. Support your answer with numerical data from the table. [1]

59 Explain how the data in the table support evolution by natural selection. [1]

Base your answers to questions 60 and 61 on the information below and on your knowledge of biology.

Based on an initial small study, some scientists think that red light may help reverse the effects of aging on eyesight. In a recent study, scientists exposed people's eyes to red light for three minutes each morning. After exposure to this red light, a few people showed measurable improvement in their color vision. Scientists developed the following model to explain how red light can improve color vision:



60 State *one* reason why the results of this research study may be questioned. [1]

61 If the results of the study are supported, explain how increased mitochondrial activity might help light-receptor cells improve their function. [1]

Sunscreen: A Necessary Product With a Catch

Sunscreen is an extremely important product that protects people from the rays of the Sun that can cause skin cancer. Unfortunately, certain chemicals found in some sunscreen products make their way into the ocean. Scientists discovered that when green algae and phytoplankton are exposed to these chemicals, the rate of photosynthesis is significantly reduced.

62 Explain how the effect of the chemicals found in some sunscreen products can result in a *negative* impact on an entire ecosystem. [1]

Base your answers to questions 63 through 66 on the information below and on your knowledge of biology.

The Avian Vampire Fly

The avian vampire fly was accidently brought to the Galapagos Islands in the 1960s and is now considered among the greatest threats to Darwin's finches. The vampire fly lays its eggs in bird nests, and the fly larvae slowly feed on the blood of the chicks, sometimes causing all the chicks in a nest to die.

Researchers investigated the impact of the vampire fly. They found the fly's larvae are most abundant in the nests of the endangered medium tree finch, resulting in a high death rate for their chicks. The researchers also discovered the medium tree finches have been interbreeding with small tree finches, producing a hybrid population. They found that the vampire fly larvae in the nests of the hybrid finches had less success feeding on the hybrid chicks.

63 Identify the relationship between the avian vampire fly and Darwin's finches. [1]

64 Without a means of controlling the avian vampire fly, explain why conservationists are concerned that the vampire fly will negatively affect the stability of the Galapagos ecosystem. [1]

65 What evidence presented in the article supports the claim that the population of hybrid finches will be more successful than the medium tree finches? [1]

66 Researchers discovered a wasp species on mainland South America that lays eggs in flies that are closely related to the Galapagos vampire flies. Before deciding to release the wasps on the Galapagos Islands, identify *one* specific question researchers should investigate in order to be sure the wasps will *not* cause more harm than good. [1]

A legislative council is planning to require that newly constructed commercial buildings use less fossil fuels than previously constructed buildings. The expectation is that all new buildings use at least one type of renewable energy to power the building.

67 Describe how the policy the legislative council is considering will affect future generations. [1]

Base your answers to questions 68 and 69 on the information below and on your knowledge of biology.

Starlings, sparrows, and other European birds were intentionally released in New York City during the 1890s. Today their numbers have increased to the point of overpopulation.

68 Explain why these populations of European birds were able to increase out of control in their new environment. [1]

69 Explain why the carrying capacity for native birds in New York City has *decreased* over the same period of time. [1]

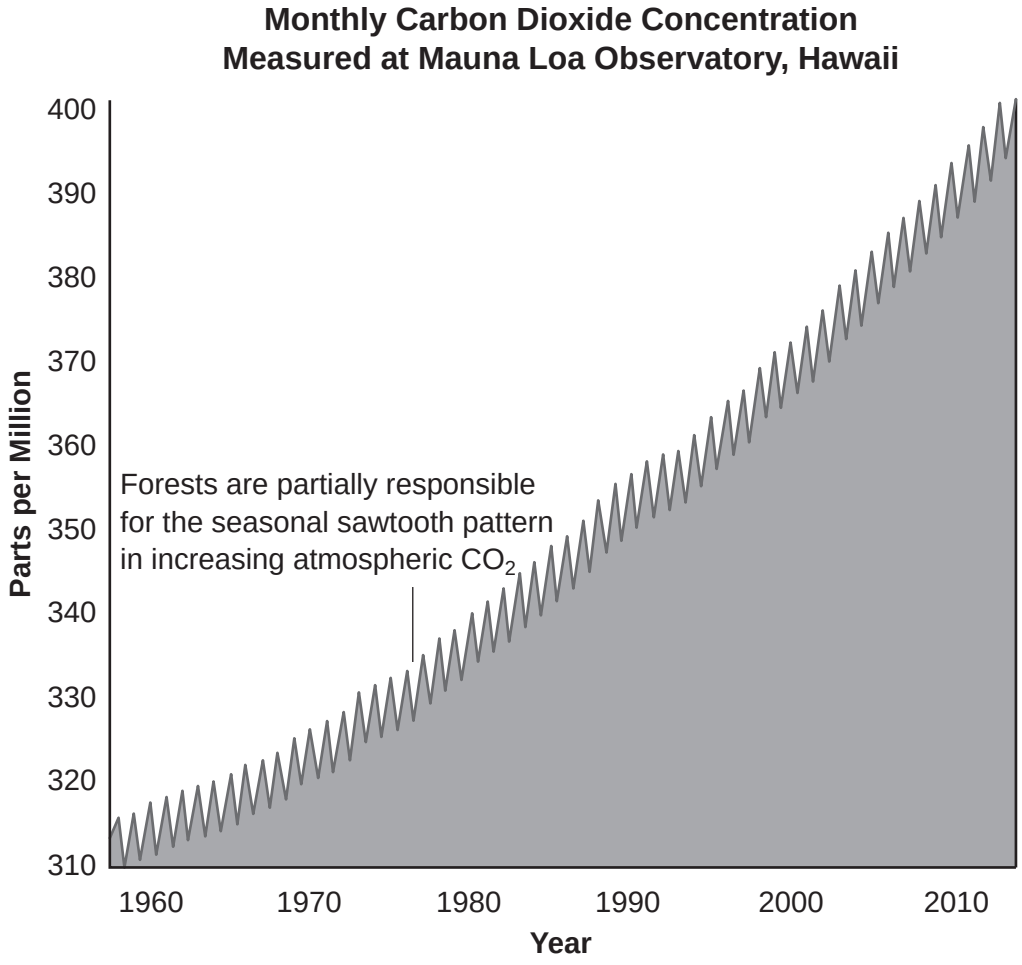
Base your answers to questions 70 through 72 on the information below, on the next page, and on your knowledge of biology.

Increasing Forests: Not An Easy Answer to Climate Change

Forests can be a big help in absorbing carbon dioxide (CO_2) from the atmosphere. Currently, Earth's forests contain approximately three trillion trees. Countries have been looking at increasing this number as a means of reducing the level of atmospheric CO_2.

Some scientists caution that planting new forests can have drawbacks. It's more than a matter of just adding more trees. Planting trees in snow-covered areas could increase the absorption of solar radiation. This would result in warming of the soil and melting of the snow. Also, research and planning need to be used to determine which type of trees will grow best in a region and the long-term ecological effect due to the growth of these trees.

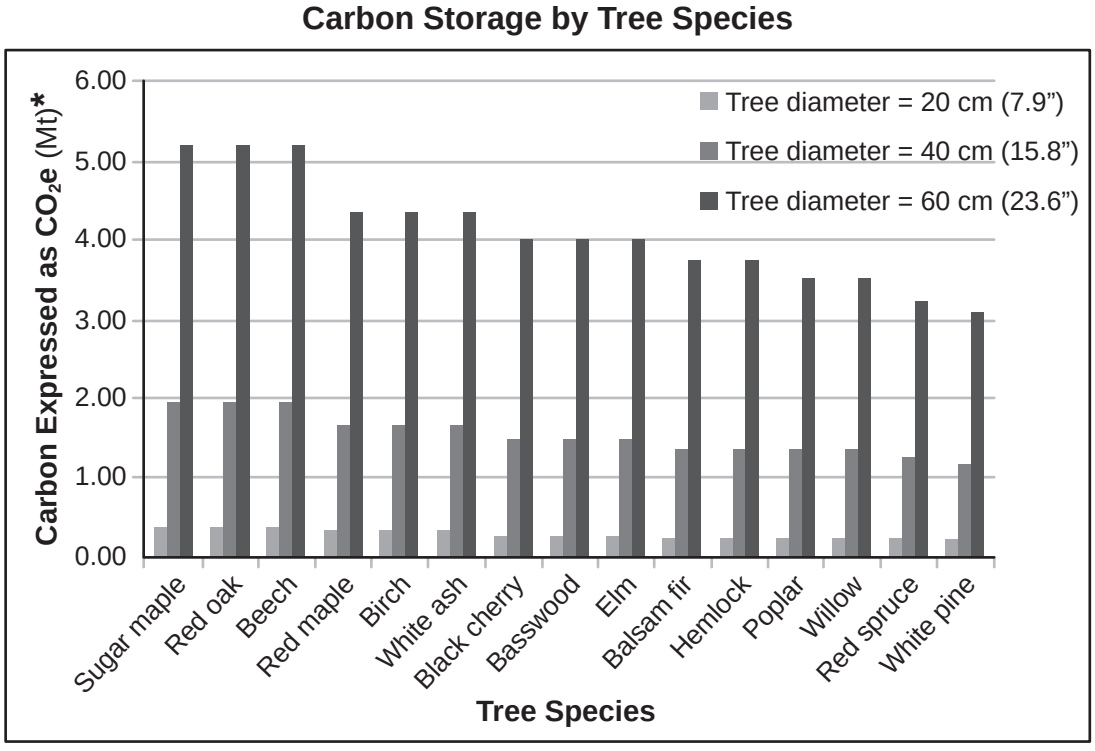
Earth's forests absorb approximately 16 billion metric tons of CO_2 a year. Land clearing, wildfires, and the burning of wood products have increased the release of CO_2 back into the atmosphere to about 8.1 billion tons a year. Deforestation and forest degradation are decreasing the overall ability of forests to maintain or decrease atmospheric CO_2 levels. The data in the graph below show the CO_2 levels from approximately 1960 to 2010.



70 Based on the information provided, state a conclusion that can be made regarding the effect of forests on the atmospheric CO_2 levels between 1960 and 2010. Support your answer. [1]

71 In addition to removing CO_2 from the air, describe *one* other role of a stable, diverse forest in an ecosystem. [1]

To help with the problem of deforestation and increasing atmospheric CO_2, scientists recommended planting trees that are known to store carbon in their structures. Red oak trees and hemlock trees have been suggested to reforest land in deforested areas. Both types of trees will grow successfully in the region being studied.



*Metric Tons

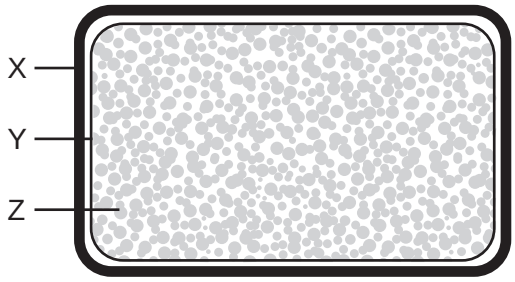
72 Identify which tree species, red oak or hemlock, should be planted, and provide evidence to support your selection. [1]

Part D

Answer all questions in this part. [13]

Directions (73–85): For those questions that are multiple choice, record on the separate answer sheet the *number* of the choice that, of those given, best completes each statement or answers each question. For all other questions in this part, follow the directions given and record your answers in the spaces provided in this examination booklet.

The diagram below represents a plant cell.



Note: The answer to question 73 should be recorded on your separate answer sheet.

73 Which statement describes how the appearance of this cell will change if the cell is placed in a concentrated salt solution?

(1) Structures *X* and *Y* will shrink, but *Z* will remain the same.
(2) Structures *Y* and *Z* will shrink, but *X* will remain the same.
(3) Structures *X* and *Z* will remain the same, but *Y* will become larger.
(4) Structures *X* and *Y* will remain the same, but *Z* will become larger.

Note: The answer to question 74 should be recorded on your separate answer sheet.

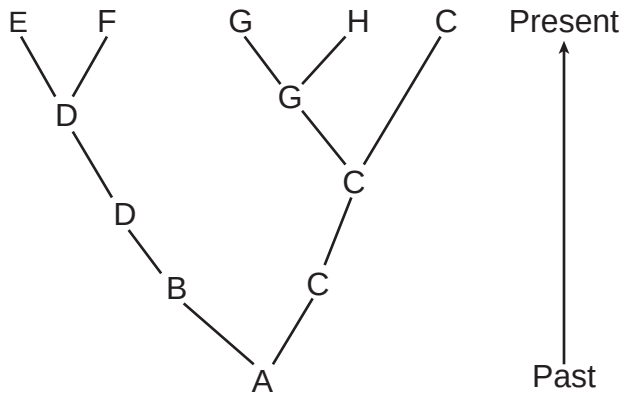
74 Factors that contributed to the evolution of the Galapagos finches include

(1) cloning and mutation
(2) migration and asexual reproduction
(3) recombination and selective breeding
(4) variation and competition

Base your answers to questions 75 through 77 on the information below and on your knowledge of biology.

The diagram shows the evolutionary relationships among several different species, *A* through *H*.

Evolutionary Relationships



Note: The answer to question 75 should be recorded on your separate answer sheet.

75 Which *two* species would be expected to show the greatest similarity in DNA?

(1) *C* and *D*
(2) *A* and *F*
(3) *C* and *G*
(4) *F* and *H*

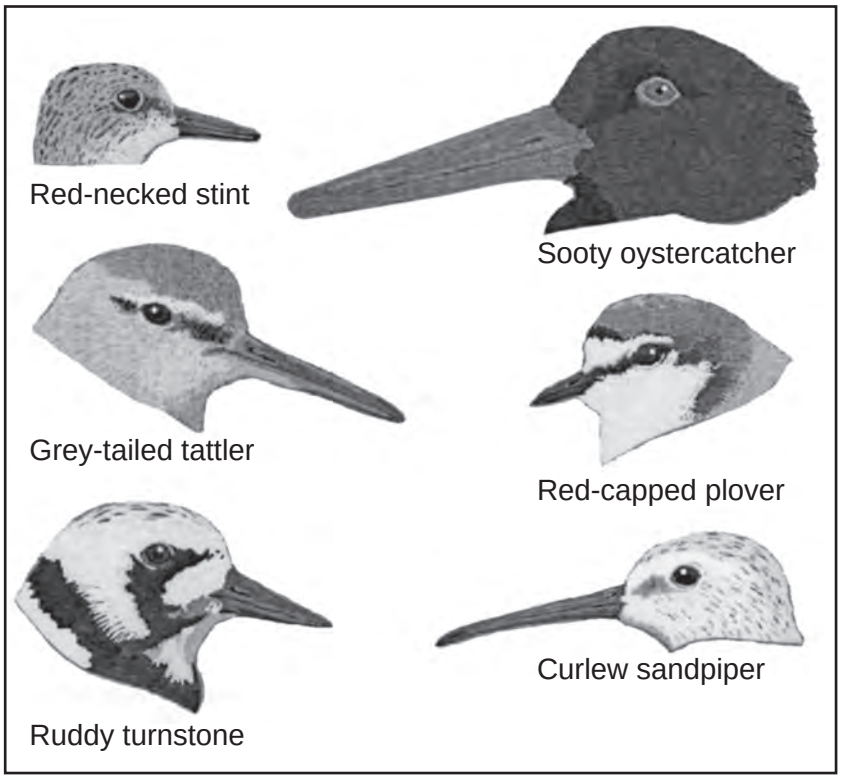
Note: The answer to question 76 should be recorded on your separate answer sheet.

76 Which species has been the most successful in surviving changes in its environment?

(1) *H*
(2) *G*
(3) *C*
(4) *D*

77 Soon after species *B* evolved, a mutation occurred that caused the species to produce a certain protein. Identify *one* other species in the diagram that could be expected to have this same protein. Support your answer. [1]

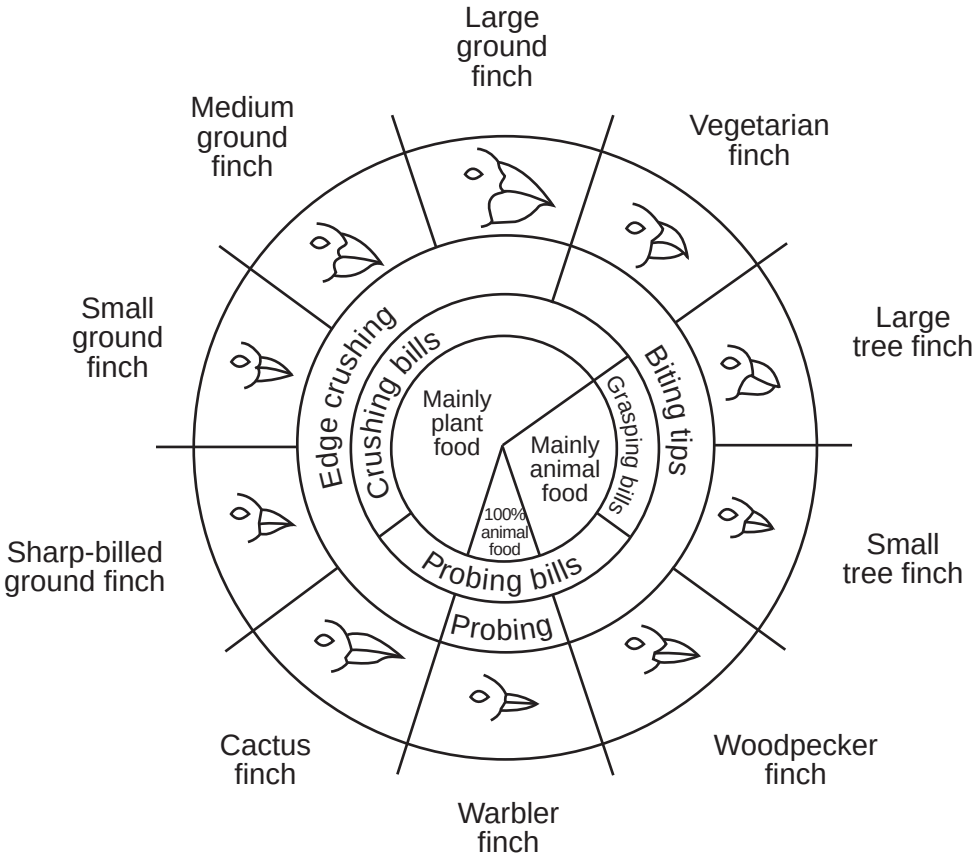
Base your answers to questions 78 and 79 on the Australian shorebirds illustrated below and on your knowledge of biology.



78 Identify *two* birds that you would expect to eat similar foods. Support your answer with information from the illustration. [1]

79 State *one* way the pattern of coloration of the feathers on the head of the birds, such as the ruddy turnstone, could be an advantage to the species for survival. [1]

Variations in Beaks of Galapagos Islands Finches



80 The warbler finch and sharp-billed ground finch live on an island. It was proposed to heavily spray the island with pesticides to reduce the mosquito population. Explain the effect this would have on the populations of *both* of these bird species. Support your answer. [1]

Base your answers to questions 81 and 82 on the information below and on your knowledge of biology.

Data in the table below compare differences in the amino acid sequences for a specific mitochondrial enzyme found in seven species to the enzyme in humans.

Differences in Amino Acid Sequences

Organism	Number of Amino Acid Differences in Enzyme Compared to Humans
wheat	43
mold	48
moth	31
dog	11
horse	12
chicken	13
monkey	1

Note: The answer to question 81 should be recorded on your separate answer sheet.

81 Of the organisms listed below, which one has a DNA code for the enzyme that is most similar to that of a human?

(1) horse
(2) chicken
(3) moth
(4) dog

Note: The answer to question 82 should be recorded on your separate answer sheet.

82 The fact that the mitochondria of all these species contain this enzyme could lead to the inference that

(1) this enzyme is necessary for the species to digest proteins
(2) these species have all evolved from a common ancestor that produced this enzyme
(3) mutations in the genes that code for this enzyme always occur during DNA replication
(4) only heterotrophs synthesize this enzyme

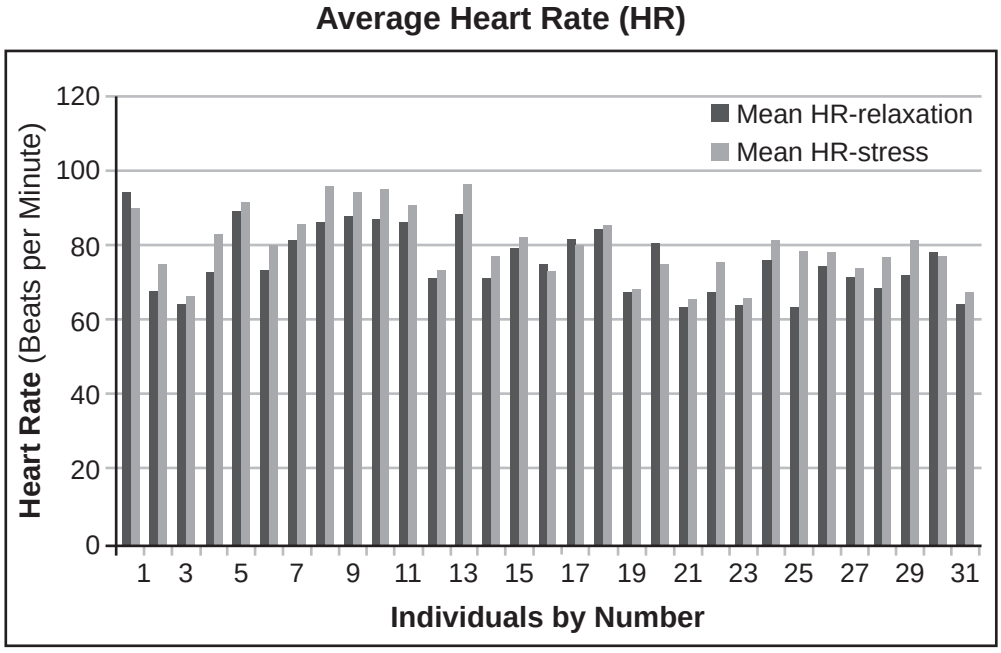
A group of students squeezed a clothespin for two minutes. At the conclusion of the two minutes, all of the students experienced fatigue in their finger muscles.

83 Describe what happened within their muscle cells that caused the students to experience muscle fatigue after squeezing the clothespin during the second minute. [1]

Base your answers to questions 84 and 85 on the information below and on your knowledge of biology.

Researchers designed a controlled experiment to test the idea that average heart rate (HR) increases during periods of stress. They fitted 31 people with heart rate monitors. During the first part of the experiment, participants were asked to relax in a seated position while listening to soothing music for ten minutes.

During the second part of the experiment, participants played a smartphone game designed to induce mental stress for an additional ten minutes. The results from the investigation are shown in the graph below.



84 Based on the data, what can researchers conclude about the relationship between stress and heart rate? [1]

85 Some students claimed that the validity of the experiment should be questioned because everyone has a different average relaxed heart rate. Explain why the results of this experiment could still be considered valid, and support your answer. [1]

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LIVING ENVIRONMENT

The State Education Department / The University of the State of New York

Regents Examination in Living Environment – January 2026

Scoring Key: Parts A, B-1, B-2 and D (Multiple-Choice Questions)

Examination	Date	Question Number	Scoring Key	Question Type	Credit	Weight
Living Environment	January '26	**1**	**3**	MC	1	1
Living Environment	January '26	**2**	**1**	MC	1	1
Living Environment	January '26	**3**	**3**	MC	1	1
Living Environment	January '26	**4**	**1**	MC	1	1
Living Environment	January '26	**5**	**3**	MC	1	1
Living Environment	January '26	**6**	**4**	MC	1	1
Living Environment	January '26	**7**	**2**	MC	1	1
Living Environment	January '26	**8**	**4**	MC	1	1
Living Environment	January '26	**9**	**3**	MC	1	1
Living Environment	January '26	**10**	**2**	MC	1	1
Living Environment	January '26	**11**	**1**	MC	1	1
Living Environment	January '26	**12**	**2**	MC	1	1
Living Environment	January '26	**13**	**1**	MC	1	1
Living Environment	January '26	**14**	**2**	MC	1	1
Living Environment	January '26	**15**	**2**	MC	1	1
Living Environment	January '26	**16**	**4**	MC	1	1
Living Environment	January '26	**17**	**3**	MC	1	1
Living Environment	January '26	**18**	**2**	MC	1	1
Living Environment	January '26	**19**	**1**	MC	1	1
Living Environment	January '26	**20**	**2**	MC	1	1
Living Environment	January '26	**21**	**2**	MC	1	1
Living Environment	January '26	**22**	**1**	MC	1	1
Living Environment	January '26	**23**	**3**	MC	1	1
Living Environment	January '26	**24**	**4**	MC	1	1
Living Environment	January '26	**25**	**2**	MC	1	1
Living Environment	January '26	**26**	**4**	MC	1	1
Living Environment	January '26	**27**	**3**	MC	1	1
Living Environment	January '26	**28**	**1**	MC	1	1
Living Environment	January '26	**29**	**2**	MC	1	1
Living Environment	January '26	**30**	**2**	MC	1	1
Living Environment	January '26	**31**	**1**	MC	1	1
Living Environment	January '26	**32**	**1**	MC	1	1
Living Environment	January '26	**33**	**2**	MC	1	1
Living Environment	January '26	**34**	**4**	MC	1	1
Living Environment	January '26	**35**	**3**	MC	1	1
Living Environment	January '26	**36**	**4**	MC	1	1
Living Environment	January '26	**37**	**4**	MC	1	1
Living Environment	January '26	**38**	**2**	MC	1	1
Living Environment	January '26	**39**	**2**	MC	1	1
Living Environment	January '26	**40**	**1**	MC	1	1
Living Environment	January '26	**41**	**1**	MC	1	1
Living Environment	January '26	**42**	**4**	MC	1	1
Living Environment	January '26	**43**	**2**	MC	1	1
Living Environment	January '26	**47**	**1**	MC	1	1
Living Environment	January '26	**49**	**3**	MC	1	1
Living Environment	January '26	**50**	**3**	MC	1	1
Living Environment	January '26	**73**	**2**	MC	1	1
Living Environment	January '26	**74**	**4**	MC	1	1
Living Environment	January '26	**75**	**3**	MC	1	1
Living Environment	January '26	**76**	**3**	MC	1	1
Living Environment	January '26	**81**	**4**	MC	1	1
Living Environment	January '26	**82**	**2**	MC	1	1

Regents Examination in Living Environment – January 2026

Scoring Key: Parts B-2, C, and D (Constructed Response Questions)

Examination	Date	Question Number	Scoring Key	Question Type	Credit	Weight
Living Environment	January '26	**44**	–	CR	1	1
Living Environment	January '26	**45**	–	CR	1	1
Living Environment	January '26	**46**	–	CR	1	1
Living Environment	January '26	**48**	–	CR	1	1
Living Environment	January '26	**51**	–	CR	1	1
Living Environment	January '26	**52**	–	CR	1	1
Living Environment	January '26	**53**	–	CR	1	1
Living Environment	January '26	**54**	–	CR	1	1
Living Environment	January '26	**55**	–	CR	1	1
Living Environment	January '26	**56**	–	CR	1	1
Living Environment	January '26	**57**	–	CR	1	1
Living Environment	January '26	**58**	–	CR	1	1
Living Environment	January '26	**59**	–	CR	1	1
Living Environment	January '26	**60**	–	CR	1	1
Living Environment	January '26	**61**	–	CR	1	1
Living Environment	January '26	**62**	–	CR	1	1
Living Environment	January '26	**63**	–	CR	1	1
Living Environment	January '26	**64**	–	CR	1	1
Living Environment	January '26	**65**	–	CR	1	1
Living Environment	January '26	**66**	–	CR	1	1
Living Environment	January '26	**67**	–	CR	1	1
Living Environment	January '26	**68**	–	CR	1	1
Living Environment	January '26	**69**	–	CR	1	1
Living Environment	January '26	**70**	–	CR	1	1
Living Environment	January '26	**71**	–	CR	1	1
Living Environment	January '26	**72**	–	CR	1	1
Living Environment	January '26	**77**	–	CR	1	1
Living Environment	January '26	**78**	–	CR	1	1
Living Environment	January '26	**79**	–	CR	1	1
Living Environment	January '26	**80**	–	CR	1	1
Living Environment	January '26	**83**	–	CR	1	1
Living Environment	January '26	**84**	–	CR	1	1
Living Environment	January '26	**85**	–	CR	1	1

Key
MC = Multiple-choice question
CR = Constructed-response question

The chart for determining students' final examination scores for the **January 2026 Regents Examination in Living Environment** will be posted on the Department's web site at https://www.nysedregents.org/LivingEnvironment/ on the day of the examination. Conversion charts provided for the previous administrations of the Living Environment examination must NOT be used to determine students' final scores for this administration.

FOR TEACHERS ONLY

The University of the State of New York
REGENTS HIGH SCHOOL EXAMINATION

LIVING ENVIRONMENT

Tuesday, January 20, 2026 — 1:15 to 4:15 p.m., only

RATING GUIDE

Directions to the Teacher:

Refer to the directions on page 2 before rating student papers.

Updated information regarding the rating of this examination may be posted on the New York State Education Department's web site during the rating period. Check this web site at: https://www.nysed.gov/state-assessment/high-school-regents-examinations and select the link "Scoring Information" for any recently posted information regarding this examination. This site should be checked before the rating process for this examination begins and several times throughout the Regents Examination period.

Directions to the Teacher

Follow the procedures below for scoring student answer papers for the Regents Examination in Living Environment. Additional information about scoring is provided in the publication *Directions for Scoring Regents Examinations*.

Allow 1 credit for a correct response to each item.

At least two science teachers must participate in the scoring of the Part B–2, Part C, and Part D open-ended questions on a student's paper. Each of these teachers should be responsible for scoring a selected number of the open-ended questions on each answer paper. No one teacher is to score more than approximately one-half of the open-ended questions on a student's answer paper. Teachers may not score their own students' answer papers.

Students' responses must be scored strictly according to the Rating Guide. For open-ended questions, credit may be allowed for responses other than those given in the rating guide if the response is a scientifically accurate answer to the question and demonstrates adequate knowledge as indicated by the examples in the rating guide. Do not attempt to correct the student's work by making insertions or changes of any kind. On the student's separate answer sheet, for each question, record the number of credits earned and the teacher's assigned rater/scorer letter.

Fractional credit is *not* allowed. Only whole-number credit may be given for a response. If the student gives more than one answer to a question, only the first answer should be rated. Units need not be given when the wording of the questions allows such omissions.

For hand scoring, raters should enter the scores earned in the appropriate boxes printed on the separate answer sheet. Next, the rater should add these scores and enter the total in the box labeled "Total Raw Score." Then the student's raw score should be converted to a scale score by using the conversion chart that will be posted on the Department's web site at: https://www.nysed.gov/state-assessment/high-school-regents-examinations on Tuesday, January 20, 2026. The student's scale score should be entered in the box labeled "Scale Score" on the student's answer sheet. The scale score is the student's final examination score.

Schools are not permitted to rescore any of the open-ended questions on this exam after each question has been rated once, regardless of the final exam score. Schools are required to ensure that the raw scores have been added correctly and that the resulting scale score has been determined accurately.

Because scale scores corresponding to raw scores in the conversion chart may change from one administration to another, it is crucial that, for each administration, the conversion chart provided for that administration be used to determine the student's final score.

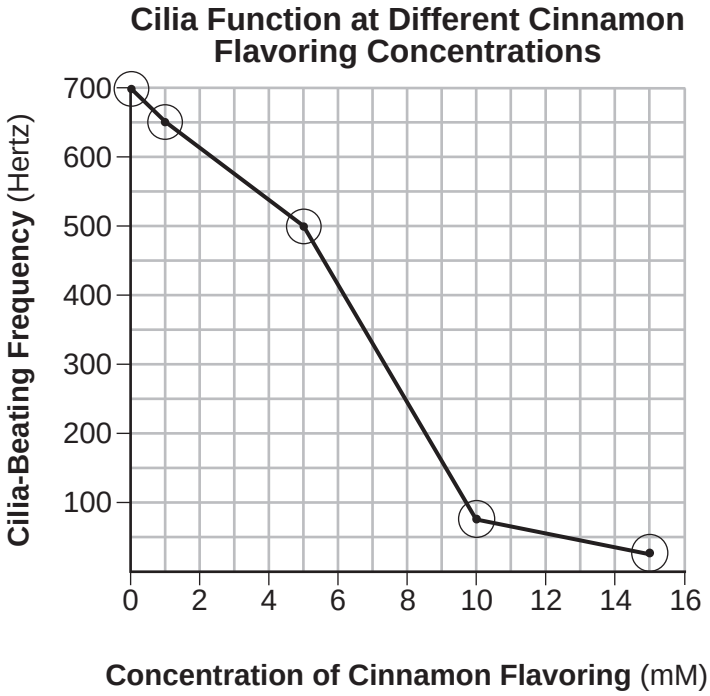
Part B–2

44 [1] Allow 1 credit for marking an appropriate scale on the grid provided, without any breaks in the data, on each labeled axis.

Note: Do *not* allow credit if the grid is altered to accommodate the scale.

45 [1] Allow 1 credit for correctly plotting the data and connecting the points and surrounding each point with a small circle.

Example of a 2-credit graph for questions 44–45:



Note: Allow credit if the points are plotted correctly, but not circled.

Do *not* assume that the intersection of the x- and y-axes is the origin (0,0) unless it is labeled. An appropriate scale only needs to include the data range in the data table.

46 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— As the concentration of cinnamon flavoring increased, the cilia beating frequency decreased.

— The cilia work better at lower concentrations of cinnamon flavoring.

— It is an indirect relationship.

— Cilia function decreases as cinnamon concentration increases.

47 1

48 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— When the concentration of cinnamon flavoring is 10 mM, the cilia are only beating 75 Hertz (Hz) compared with 700 Hz with no flavoring. They won't be able to clear the airways of harmful pathogens, so they are more likely to get sick.

— When the concentration of flavoring increases, the cilia don't beat as much and bacteria and viruses aren't removed from the respiratory tract, which would probably increase the risk of lung infection.

— Cinnamon reduces the ability of the cilia to remove inhaled particles/pathogens from the air tract.

49 3

50 3

51 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— For people to be protected from hepatitis B, all they would need to do is eat a banana.

— The genetically modified banana may be inexpensive to produce and does not need to be refrigerated.

— People who are afraid of needles would just need to eat a banana to be vaccinated.

— People may have fewer reactions to the vaccine.

52 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Organ *A* and organ *C* both produce gametes.

— The ovaries and testes both produce sex hormones.

— They both produce reproductive cells.

— Cells produced in *A* and *C* carry out meiosis.

53 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The uterus supports the development of the embryo/fetus.

— It is where the fetus develops.

— protects the fetus during its development

54 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— As the level of oxygen decreases, the level of EPO increases to counteract this.

— Low oxygen stimulates the kidney cells to produce and release EPO. Increased EPO results in an increase in the production of red blood cells, which raises the oxygen levels.

55 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— If the person's kidney cells do not produce sufficient EPO, the result would be a low red blood cell count and reduced oxygen levels.

— The person might suffer from reduced energy levels, since a low amount of oxygen would circulate to the cells due to a reduced EPO level and low red blood cell count.

— Homeostasis will be upset because they won't have enough oxygen/energy.

Part C

56 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Without genetic modification, the pig organs would be rejected.

— Genetic modification can remove retroviruses in the pig genome that could be harmful to human cells.

— Modifying the genes stops the expression of factors that cause transplants to be rejected.

— It is necessary to minimize the foreign substances/antigens on the pig organs that stimulate the immune system of the recipient.

57 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Unlike using pig organs, the twins from the same zygote have the same DNA code, so their organs don't cause an immune reaction.

— Identical twins have the same genetic information, so the transplanted kidney would not be treated as foreign by the patient.

— Unlike the genetically modified pigs, the identical twins had the same DNA.

58 [1] Allow 1 credit for identifying the O'Neill Pass population as having the most variation and supporting the answer with data from the table. Acceptable responses include, but are not limited to:

— The O'Neill Pass population is 34 tan and 43 dark mice. The percentage of tan mice is 44%. The other populations are either 100%, 94%, 7%, or 0% tan.

— The population at O'Neill Pass is composed of 34 mice with light fur and 43 mice with dark fur. None of the other populations have that great a mixture of fur colors.

59 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— More dark-colored rock pocket mice live on the dark lava flows than light-colored mice. Having dark fur on a dark surface appears to provide a survival advantage.

— Except for O'Neill Pass, the other locations show the mice that survived are camouflaged to the soil color.

60 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— It was only a small study.

— Using red light over a long time might be harmful to the eyes.

— There was no control group in this experiment.

61 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Increased mitochondria activity creates more ATP to power cell functions.

— More mitochondria will release more energy for the receptor cells.

— Cells can function better with more energy.

62 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Green algae are producers, so if there are fewer producers, then there will be a decrease in the amount of food available to herbivores and carnivores.

— If green algae carry out less photosynthesis, there will be less energy available at each feeding level.

— The stability of the ecosystem would be at risk, since producers convert solar energy into chemical bond energy.

— When one or more organisms in a habitat are harmed or removed, the entire habitat can be disrupted.

63 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— parasite/host

— positive (fly)/negative (host)

— They have a parasitic relationship.

64 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The loss/extinction of the medium tree finch reduces biodiversity, which would reduce stability of the ecosystem.

— Reduced diversity of species decreases the chance that some will survive in the face of large environmental change.

— The loss of these finches will disrupt food webs.

65 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The hybrid finch chicks are more likely to survive, reproduce, and have offspring because they are less affected by the flies.

— The hybrid finch chicks have more success surviving attacks from vampire flies than chicks of the medium tree finch.

— Vampire fly larvae had less success feeding on the hybrid chicks than the medium tree finch chicks.

66 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Are the wasps likely to prey upon any native organisms that already live there?

— Will other activities of these introduced wasps somehow reduce the biodiversity of the Galapagos Islands?

— Will these wasps survive the climate of the Galapagos long enough to be effective in reducing the vampire fly population?

— Will the wasps lay eggs in the vampire flies?

— Should the researchers investigate if the wasp will attack only the vampire flies and not native species?

67 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The policy will benefit future generations because there will be less pollution.

— The policy will extend the life of current supplies of non-renewable energy sources.

— New job opportunities will be created.

68 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The European birds have no natural predators in New York City.

— European birds found an abundance of food, so their populations increased rapidly.

— They could outcompete the native birds.

69 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— There is now less food available, so fewer native birds are supported in the environment.

— With more competition, fewer native birds can live there.

70 [1] Allow 1 credit for stating a conclusion, based on the information provided, on the effect of forests on the atmospheric CO_2 levels between 1960 and 2010 and supporting the answer. Acceptable responses include, but are not limited to:

— The existing forests are not able to prevent an increase in the atmospheric CO_2 levels.

— As deforestation takes place, carbon dioxide levels continue to build up in the atmosphere.

— Between 1960 and 2010, forests were responsible for seasonal differences in CO_2 levels.

71 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— A healthy forest provides habitats/food/niches for various animals in the ecosystem.

— Trees make energy available to many other organisms in the ecosystem.

72 [1] Allow 1 credit for red oak trees and supporting the answer. Acceptable responses include, but are not limited to:

— The red oak trees would be best. These trees store a little more than 1 Mt of carbon more then hemlock when they reach 60cm diameter.

— The mature red oaks will store about 5 Mt of carbon and the hemlock stores only about 4 Mt of carbon.

— According to the graph, the red oak trees will keep more carbon out of the atmosphere than the hemlock trees.

— The graph shows that the red oaks at any diameter store more carbon than hemlock.

Part D

73 2

74 4

75 3

76 3

77 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— *D* – it evolved from *B*

— either *D* or *E* or *F* because *B* is their ancestor

78 [1] Allow 1 credit for identifying any *two* birds that would be expected to eat similar foods. Acceptable responses include, but are not limited to:

— the red-necked stint and the red-capped plover, because they both have short beaks

— the tattler and the sandpiper, because their beaks are both long and thin, unlike the others shown

— The red-necked stint and the ruddy turnstone both have similar beaks, which are long and pointed.

79 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The camouflage/blending could make them less noticeable to predators.

— The coloration/pattern could help them attract mates.

— The pattern may make it hard for their prey to see them clearly.

80 [1] Allow 1 credit for explaining the effect of this would have on the population of these birds and supporting the answer. Acceptable responses include, but are not limited to:

— The warblers' resources might be decreased and many will not survive, while the sharp-billed ground finches eat mostly plants and won't be affected very much.

— The pesticide might be present on the foods of both types of birds and cause them to be sickened by the chemicals in it, and their population could decrease.

81 4

82 2

83 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Certain waste products produced by muscle cell activity had built up in their cells.

— Lactic acid/wastes accumulated in their cells.

— Exercise caused their muscle cells to produce waste products.

— The muscle cells used available oxygen/glucose needed to produce ATP.

84 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Stress increased heart rate in most of the participants.

— Since not all participants' heart rates increased during stressful situations, stress does not necessarily increase heart rate.

— Stress increases the heart rate slightly in a majority of people, but not all.

— Heart rate increased in about 26 out of 31 participants during stressful situations, therefore stress increases heart rate.

85 [1] Allow 1 credit for explaining why these results are valid even though average individual heart rates may vary and supporting the answer. Acceptable responses include, but are not limited to:

— People are different and have different average relaxed heart rates, and about 80% of them reacted to stress anyway.

— Even though heart rates vary, many of the people tested showed a higher rate under stress than they did relaxing.

— Approximately 80% of the people tested showed a higher rate under stress than when relaxing, regardless of their resting average.

— There are people with both high and low relaxed heart rates that still showed an increase in the rate with stress.

The *Chart for Determining the Final Examination Score for the January 2026 Regents Examination in Living Environment* will be posted on the Department's web site at: https://www.nysed.gov/state-assessment/high-school-regents-examinations on the day of the examination. Conversion charts provided for previous administrations of the Regents Examination in Living Environment must NOT be used to determine students' final scores for this administration.

Online Submission of Teacher Evaluations of the Test to the Department

Suggestions and feedback from teachers provide an important contribution to the test development process. The Department provides an online evaluation form for State assessments. It contains spaces for teachers to respond to several specific questions and to make suggestions. Instructions for completing the evaluation form are as follows:

1. Go to https://www.nysed.gov/state-assessment/teacher-feedback-state-assessments.

2. Click Regents Examinations.

3. Complete the required demographic fields.

4. Select the test title from the Regents Examination dropdown list.

5. Complete each evaluation question and provide comments in the space provided.

6. Click the SUBMIT button at the bottom of the page to submit the completed form.

Map to Core Curriculum

January 2026 Living Environment

Standards	Question Numbers			
	Part A 1–30	**Part B–1 31–43**	**Part B–2 44–55**	**Part C 56–72**
Standard 1 — Analysis, Inquiry and Design				
Key Idea 1		35		60, 66
Key Idea 2				
Key Idea 3			46, 49	58, 70
Appendix A (Laboratory Checklist)			44, 45, 47	
Standard 4				
Key Idea 1	3, 8, 10, 15, 26, 30	32, 37, 38, 41	48	
Key Idea 2	1, 11, 17, 20	31, 33, 34	51	
Key Idea 3	2, 14, 18, 21, 24	42		59, 65
Key Idea 4	5, 7, 19, 22, 28		52, 53	57
Key Idea 5	9, 13, 16	36	50, 54, 55	56, 61
Key Idea 6	25, 27, 29	39		62, 63, 64, 68, 69
Key Idea 7	4, 6, 12, 23	40, 43		67, 71, 72

Part D 73–85	
Lab 1	75, 76, 77, 81, 82
Lab 2	83, 84, 85
Lab 3	74, 78, 79, 80
Lab 5	73

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Regents Examination in Living Environment – January 2026

Chart for Converting Total Test Raw Scores to Final Examination Scores (Scale Scores)

Raw Score	Scale Score
85	**100**
84	**98**
83	**97**
82	**97**
81	**96**
80	**95**
79	**94**
78	**93**
77	**93**
76	**92**
75	**91**
74	**90**
73	**90**
72	**89**
71	**88**
70	**88**
69	**87**
68	**86**
67	**86**
66	**85**
65	**84**
64	**83**
63	**83**
62	**82**
61	**81**
60	**81**
59	**80**
58	**79**
57	**79**

Raw Score	Scale Score
56	**78**
55	**77**
54	**76**
53	**76**
52	**75**
51	**74**
50	**73**
49	**73**
48	**72**
47	**71**
46	**70**
45	**69**
44	**68**
43	**67**
42	**66**
41	**65**
40	**64**
39	**63**
38	**62**
37	**61**
36	**60**
35	**59**
34	**58**
33	**57**
32	**55**
31	**54**
30	**53**
29	**52**
28	**50**

Raw Score	Scale Score
27	**49**
26	**47**
25	**46**
24	**45**
23	**43**
22	**42**
21	**40**
20	**38**
19	**37**
18	**35**
17	**34**
16	**32**
15	**30**
14	**28**
13	**27**
12	**25**
11	**23**
10	**21**
9	**19**
8	**17**
7	**15**
6	**13**
5	**11**
4	**9**
3	**7**
2	**5**
1	**2**
0	**0**

To determine the student's final examination score, find the student's total test raw score in the column labeled "Raw Score" and then locate the scale score that corresponds to that raw score. The scale score is the student's final examination score. Enter this score in the space labeled "Scale Score" on the student's answer sheet.

Schools are not permitted to rescore any of the open-ended questions on this exam after each question has been rated once, regardless of the final exam score. Schools are required to ensure that the raw scores have been added correctly and that the resulting scale score has been determined accurately.

Because scale scores corresponding to raw scores in the conversion chart change from one administration to another, it is crucial that for each administration the conversion chart provided for that administration be used to determine the student's final score. The chart above is usable only for this administration of the Regents Examination in Living Environment.