The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

LIVING ENVIRONMENT

Wednesday, June 19, 2002 — 9:15 a.m. to 12:15 p.m., only

Student Name _____

School Name _____

Print your name and the name of your school on the lines above. Then turn to the last page of this booklet, which is the answer sheet for Part A. Fold the last page along the perforations and, slowly and carefully, tear off the answer sheet. Then fill in the heading of your answer sheet.

This examination has three parts. You must answer all questions in this examination. Write your answers to the Part A multiple-choice questions on the separate answer sheet. Write your answers for the questions in Parts B and C directly in this examination booklet. All answers 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 and in this examination booklet.

When you have completed the examination, you must sign the statement printed on the Part A 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.

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

Part A

Answer all questions in this part. [35]

Directions (1–35): For *each* statement or question, write 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 The current knowledge concerning cells is the result of the investigations and observations of many scientists. The work of these scientists forms a well-accepted body of knowledge about cells. This body of knowledge is an example of a

(1) hypothesis
(2) controlled experiment
(3) theory
(4) research plan

2 An experimental design included references from prior experiments, materials and equipment, and step-by-step procedures. What else should be included before the experiment can be started?

(1) a set of data
(2) a conclusion based on data
(3) safety precautions to be used
(4) an inference based on results

3 In his theory, Lamarck suggested that organisms will develop and pass on to offspring variations that they need in order to survive in a particular environment. In a later theory, Darwin proposed that changing environmental conditions favor certain variations that promote the survival of organisms. Which statement is best illustrated by this information?

(1) Scientific theories that have been changed are the only ones supported by scientists.
(2) All scientific theories are subject to change and improvement.
(3) Most scientific theories are the outcome of a single hypothesis.
(4) Scientific theories are not subject to change.

4 The dense needles of Douglas fir trees can prevent most light from reaching the forest floor. This situation would have the most immediate effect on

(1) producers
(2) carnivores
(3) herbivores
(4) decomposers

5 Which statement best describes a characteristic of an ecosystem?

(1) It must have producers and consumers but not decomposers.
(2) It is stable because it has consumers to recycle energy.
(3) It always has two or more different autotrophs filling the same niche.
(4) It must have organisms that carry out autotrophic nutrition.

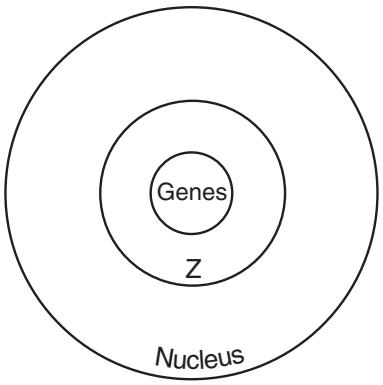
6 In a cell, all organelles work together to carry out

(1) diffusion
(2) active transport
(3) information storage
(4) metabolic processes

7 The ability of certain hormones to attach to a cell is primarily determined by the

(1) receptor molecules in the cell membrane
(2) proteins in the cytoplasm of the cell
(3) amount of DNA in the cell
(4) concentration of salts outside the cell

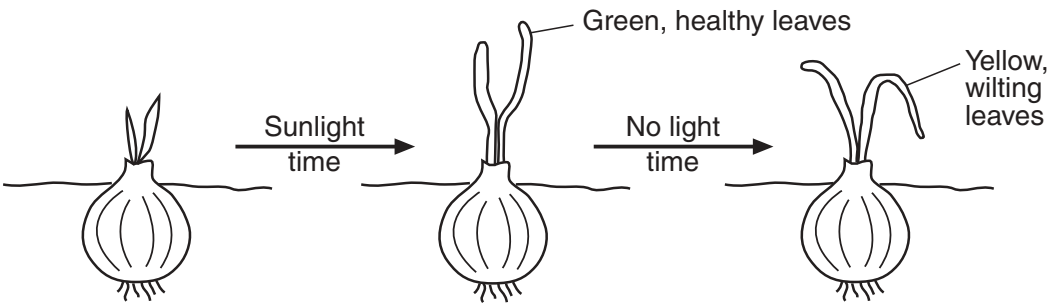
8 The diagram below represents the organization of genetic information within a cell nucleus.



The circle labeled Z most likely represents

(1) amino acids
(2) chromosomes
(3) vacuoles
(4) molecular bases

9 The diagram below represents the change in a sprouting onion bulb when sunlight is present and when sunlight is no longer available.



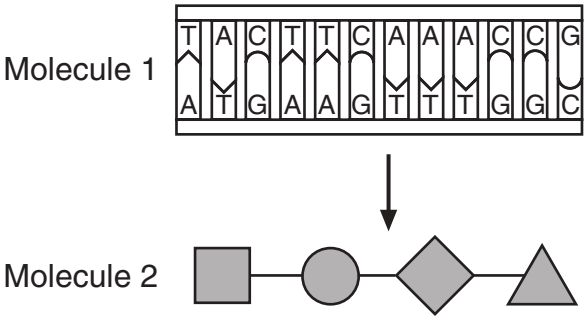
Which statement best explains this change?

(1) Plants need oxygen to survive.
(2) Environmental conditions do not alter characteristics.
(3) Plants produce hormones.
(4) The environment can influence the expression of certain genetic traits.

10 A human zygote is produced from gametes that are usually identical in

(1) the expression of encoded information
(2) the number of altered genes present
(3) chromosome number
(4) cell size

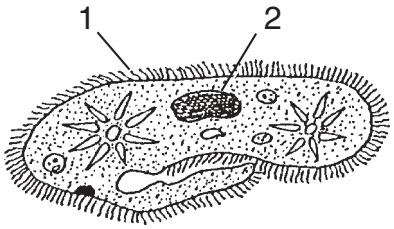
11 Molecule 1 represents a segment of hereditary information, and molecule 2 represents the portion of a molecule that is determined by information from molecule 1.



What will most likely happen if there is a change in the first three subunits on the upper strand of molecule 1?

(1) The remaining subunits in molecule 1 will also change.
(2) A portion of molecule 2 may be different.
(3) Molecule 1 will split apart, triggering an immune response.
(4) Molecule 2 may form two strands rather than one.

12 The diagram below shows two different structures, 1 and 2, that are present in many single-celled organisms. Structure 1 contains protein *A*, but not protein *B*, and structure 2 contains protein *B*, but not protein *A*.



Which statement is correct concerning protein *A* and protein *B*?

(1) Proteins *A* and *B* have different functions and different amino acid chains.
(2) Proteins *A* and *B* have different functions but the same amino acid chains.
(3) Proteins *A* and *B* have the same function but a different sequence of bases (A, C, T, and G).
(4) Proteins *A* and *B* have the same function and the same sequence of bases (A, C, T, and G).

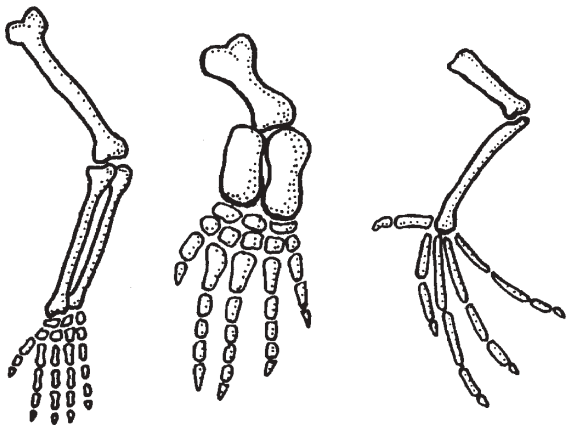
13 Which process is a common practice that has been used by farmers for hundreds of years to develop new plant and animal varieties?

(1) cloning
(2) genetic engineering
(3) cutting DNA and removing segments
(4) selective breeding for desirable traits

14 Which statement represents the major concept of the biological theory of evolution?

(1) A new species moves into a habitat when another species becomes extinct.
(2) Every period of time in Earth's history has its own group of organisms.
(3) Present-day organisms on Earth developed from earlier, distinctly different organisms.
(4) Every location on Earth's surface has its own unique group of organisms.

15 The diagrams below show the bones in the forelimbs of three different organisms.



Differences in the bone arrangements support the hypothesis that these organisms

(1) are members of the same species
(2) may have descended from the same ancestor
(3) have adaptations to survive in different environments
(4) all contain the same genetic information

16 Which situation would most likely result in the highest rate of natural selection?

(1) reproduction of organisms by an asexual method in an unchanging environment
(2) reproduction of a species having a very low mutation rate in a changing environment
(3) reproduction of organisms in an unchanging environment with little competition and few predators
(4) reproduction of organisms exhibiting genetic differences due to mutations and genetic recombinations in a changing environment

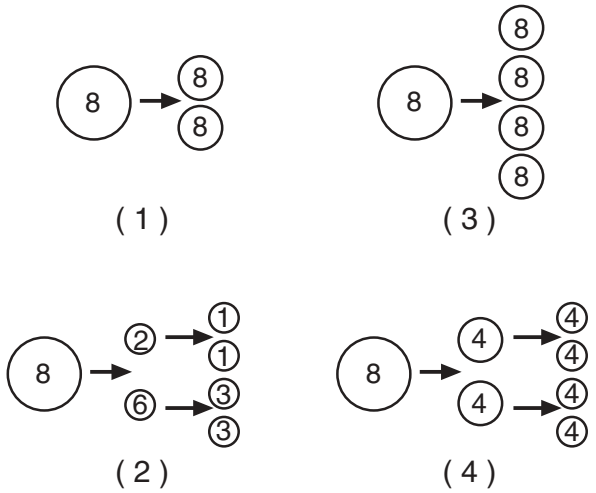
17 Some behaviors such as mating and caring for young are genetically determined in certain species of birds. The presence of these behaviors is most likely due to the fact that

(1) birds do not have the ability to learn
(2) individual birds need to learn to survive and reproduce
(3) these behaviors helped birds to survive in the past
(4) within their lifetimes, birds developed these behaviors

18 "Dolly" is a sheep developed from an egg cell of her mother that had its nucleus replaced by a nucleus from a body cell of her mother. As a result of this technique, Dolly is

(1) no longer able to reproduce
(2) genetically identical to her mother
(3) able to have a longer lifespan
(4) unable to mate

19 Which diagram best represents part of the process of sperm formation in an organism that has a normal chromosome number of eight?

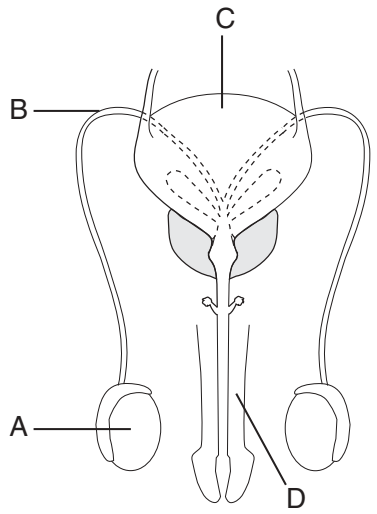


20 ATP is a compound that is synthesized when

(1) chemical bonds between carbon atoms are formed during photosynthesis
(2) energy stored in chemical bonds is released during cellular respiration
(3) energy stored in nitrogen is released, forming amino acids
(4) digestive enzymes break amino acids into smaller parts

21 Allergic reactions are most closely associated with
(1) the action of circulating hormones
(2) a low blood sugar level
(3) immune responses to usually harmless substances
(4) the shape of red blood cells

22 The diagram below represents the human male reproductive system.



Which pair of letters indicates a structure that produces gametes and a structure that makes possible the delivery of gametes for internal fertilization, respectively?
(1) *A* and *D*
(2) *B* and *D*
(3) *C* and *A*
(4) *D* and *C*

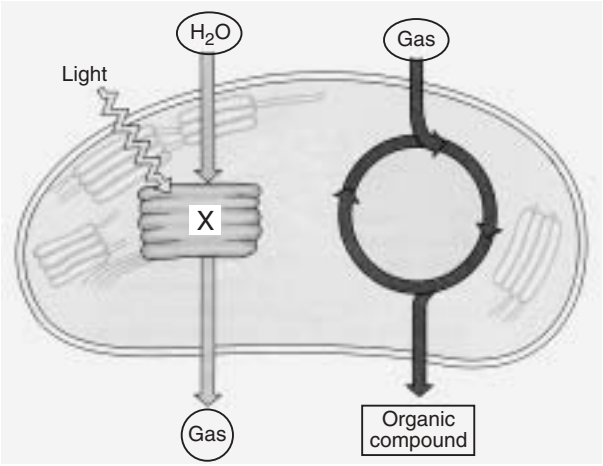
23 Microbes that enter the body, causing disease, are known as
(1) pathogens
(2) antibodies
(3) enzymes
(4) hosts

24 The blood of newborn babies is tested to determine the presence of a certain substance. This substance indicates the genetic disorder PKU, which may result in mental retardation. Babies born with this disorder are put on a special diet so that mental retardation will not develop. In this situation, modification of the baby's diet is an example of how biological research can be used to
(1) change faulty genes
(2) cure a disorder
(3) stimulate immunity
(4) control a disorder

25 Which statement illustrates a biotic resource interacting with an abiotic resource?
(1) A rock moves during an earthquake.
(2) A sea turtle transports a pilot fish to food.
(3) A plant absorbs sunlight, which is used for photosynthesis.
(4) A wind causes waves to form on a lake.

26 Which relationship best describes the interactions between lettuce and a rabbit?
(1) predator — prey
(2) producer — consumer
(3) parasite — host
(4) decomposer — scavenger

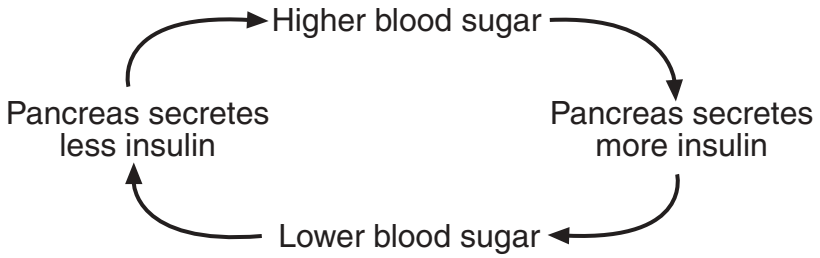
27 The diagram below represents part of a life process in a leaf chloroplast.



If the process illustrated in the diagram is interrupted by a chemical at point *X*, there would be an immediate effect on the release of
(1) chlorophyll
(2) nitrogen
(3) carbon dioxide
(4) oxygen

28 The widest variety of genetic material that can be used by humans for future agricultural or medical research would most likely be found in
(1) a large field of a genetically engineered crop
(2) an ecosystem having significant biodiversity
(3) a forest that is planted and maintained by a forest service
(4) areas that contain only one or two species

29 The diagram below shows the interaction between blood sugar levels and pancreatic activity.



This process is an example of

(1) a feedback mechanism maintaining homeostasis
(2) an immune system responding to prevent disease
(3) the digestion of sugar by insulin
(4) the hormonal regulation of gamete production

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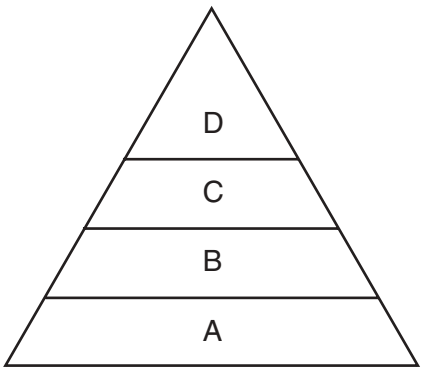
30 The diagram below represents an energy pyramid.



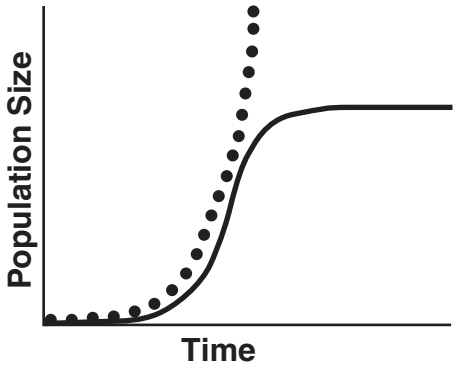
Which organisms would most likely be found at level *A*?

(1) birds
(2) worms
(3) mammals
(4) algae

31 Which human activity would have the most direct impact on the oxygen-carbon dioxide cycle?

(1) reducing the rate of ecological succession
(2) decreasing the use of water
(3) destroying large forest areas
(4) enforcing laws that prevent the use of leaded gasoline

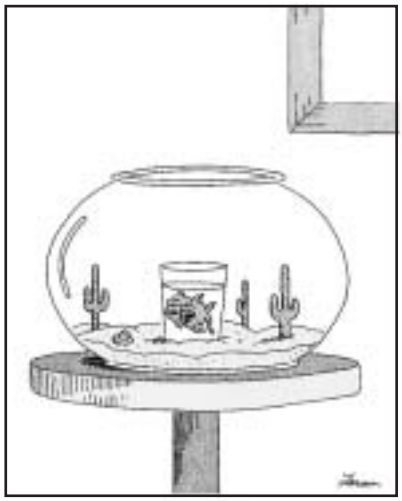
32 The dotted line on the graph below represents the potential size of a population based on its reproductive capacity. The solid line on this graph represents the actual size of the population.



Which statement best explains why the actual population growth is *less* than the potential population growth?

(1) Resources in the environment are limited.
(2) More organisms migrated into the population than out of the population.
(3) The birthrate gradually became greater than the death rate.
(4) The final population size is greater than the carrying capacity.

33 Which concept does the cartoon shown below illustrate?



"I love the desert."

(1) Fish require certain environmental conditions for survival.
(2) Fish can adapt to any environment.
(3) Fish alter the ecosystems to improve their ability to survive.
(4) Fish can survive abrupt climate changes.

34 Fertilizers used to improve lawns and gardens may interfere with the equilibrium of an ecosystem because they

(1) cause mutations in all plants
(2) cannot be absorbed by roots
(3) can be carried into local water supplies
(4) cause atmospheric pollution

35 The tall wetland plant, purple loosestrife, was brought from Europe to the United States in the early 1800s as a garden plant. The plant's growth is now so widespread across the United States that it is crowding out a number of native plants. This situation is an example of

(1) the results of the use of pesticides
(2) the recycling of nutrients
(3) the flow of energy present in all ecosystems
(4) an unintended effect of adding a species to an ecosystem

Part B

Answer all questions in this part. [30]

Directions (36–65): For those questions that are followed by four choices, circle the number of the choice that best completes the statement or answers the question. For all other questions in this part, follow the directions given in the question and record your answers in the spaces provided.

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36 The list below includes three ways of controlling viral diseases in humans.

- Administering a vaccine containing a dead or weakened virus that stimulates the body to form antibodies against the virus
- Using chemotherapy (chemical agents) to kill viruses similar to the way in which sulfa drugs or antibiotics act against bacteria
- Relying on the action of interferon, which is produced in cells and protects the body against pathogenic viruses

Based on this information, which activity would contribute to the greatest protection against viruses?

(1) producing a vaccine that is effective against interferon

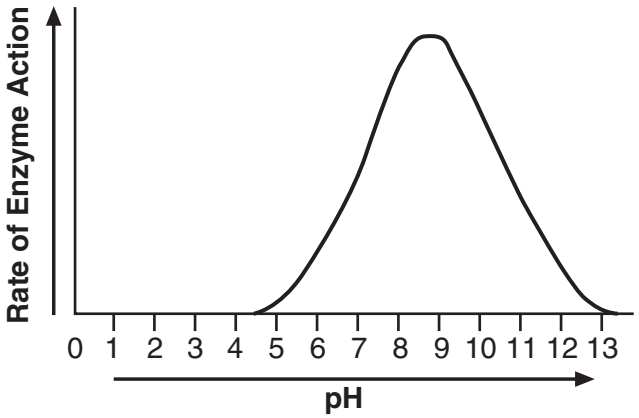
(2) developing a method to stimulate the production of interferon in cells

(3) using interferon to treat a number of diseases caused by bacteria

(4) synthesizing a sulfa drug that prevents the destruction of bacteria by viruses

36 ☐

37 The effect of pH on a certain enzyme is shown in the graph below.



At what pH would the enzyme be most effective?

(1) above 10

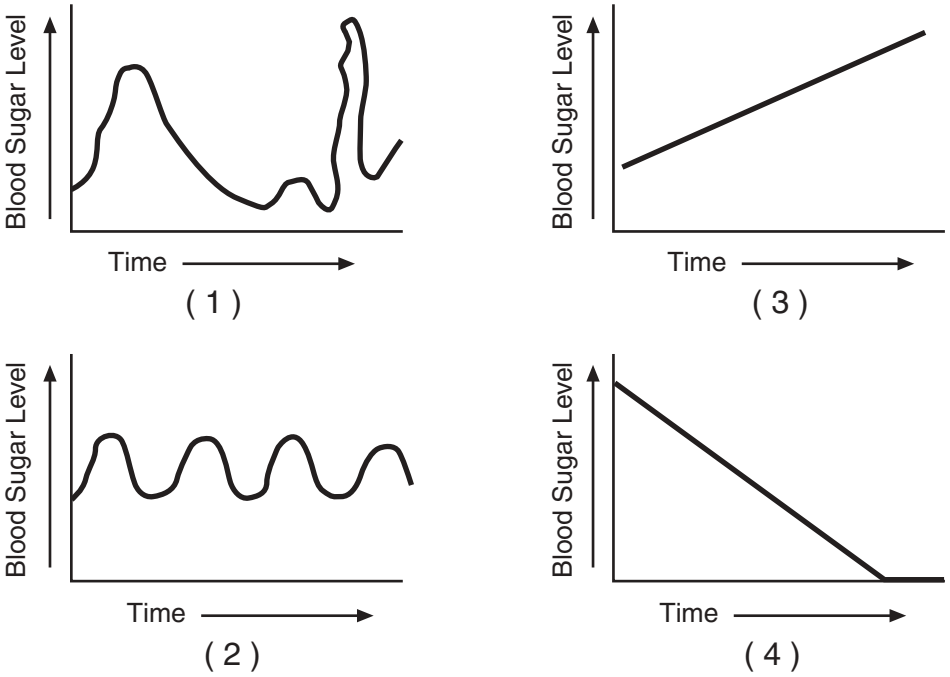
(2) between 8 and 10

(3) between 5 and 7

(4) below 5

37 ☐

38 Which graph of blood sugar level over a 12-hour period best illustrates the concept of dynamic equilibrium in the body?



38 ☐

39 A student hypothesized that lettuce seeds would not germinate (begin to grow) unless they were covered with soil. The student planted 10 lettuce seeds under a layer of soil and scattered 10 lettuce seeds on top of the soil. The data collected are shown in the table below.

Data Table

Seed Treatment	Number of Seeds Germinated
Planted under soil	9
Scattered on top of soil	8

To improve the reliability of these results, the student should

(1) conclude that darkness is necessary for lettuce seed germination

(2) conclude that light is necessary for lettuce seed germination

(3) revise the hypothesis

(4) repeat the experiment using a larger sample size

39 ☐

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Base your answers to questions 40 through 43 on the diagram below, which represents the relationships between animals in a possible canine family tree, and on your knowledge of biology.

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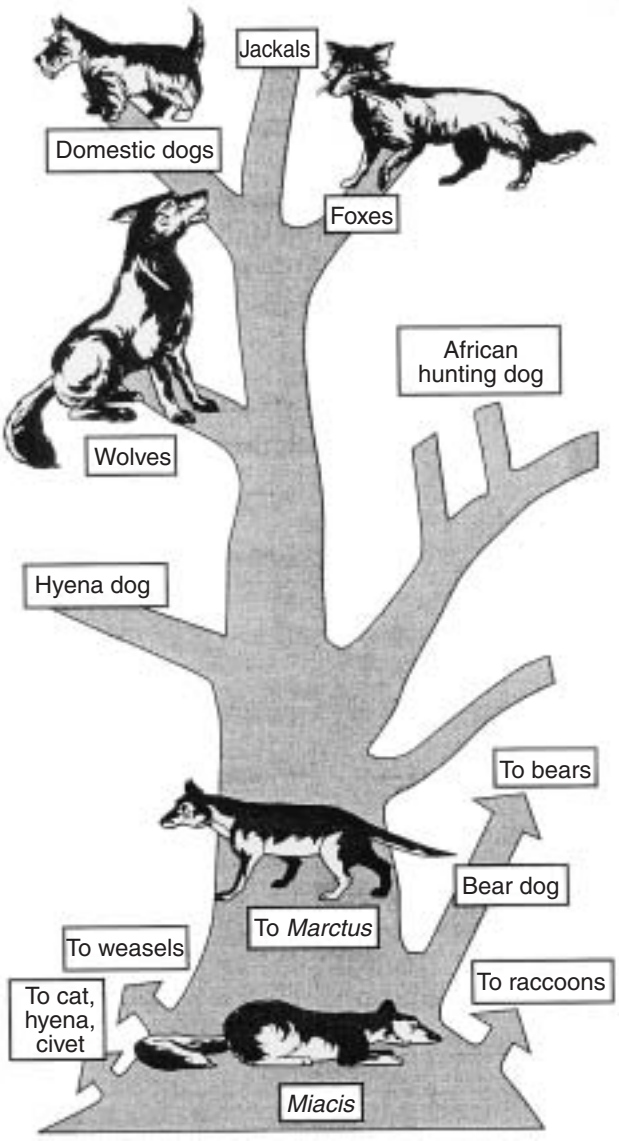
Canine Family Tree



40 According to the diagram, which group of organisms has the most closely related members?

(1) cats, weasels, and wolves

(2) bears, raccoons, and hyena dogs

(3) jackals, foxes, and domestic dogs

(4) African hunting dogs, hyena dogs, and domestic dogs

40 ☐

41 According to the canine family tree, weasels, foxes, and domestic dogs all most likely originated from the

(1) wolf

(2) bear dog

(3) *Marctus*

(4) *Miacis*

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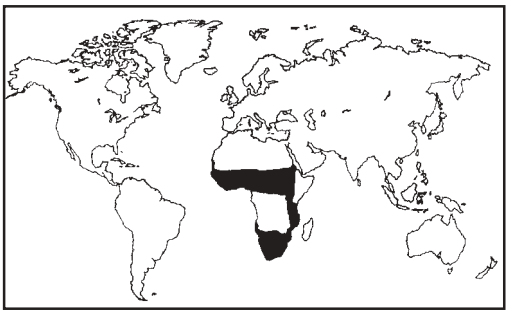
41 ☐

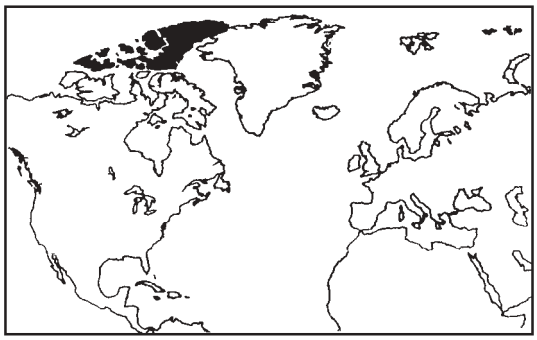
42 State *one* valid inference regarding the relationship of bears to other animals in the canine family tree. [1]

42 ☐

43 The ranges of the African hunting dog and Arctic wolf are represented in the maps shown below.



■ Range of the African hunting dog



■ Range of the Arctic wolf

State a possible hypothesis that might explain why these two related animals successfully inhabit different areas of Earth. [1]

43 ☐

Base your answers to questions 44 through 47 on the data table and information below and on your knowledge of biology. The data table shows water temperatures at various depths in an ocean.

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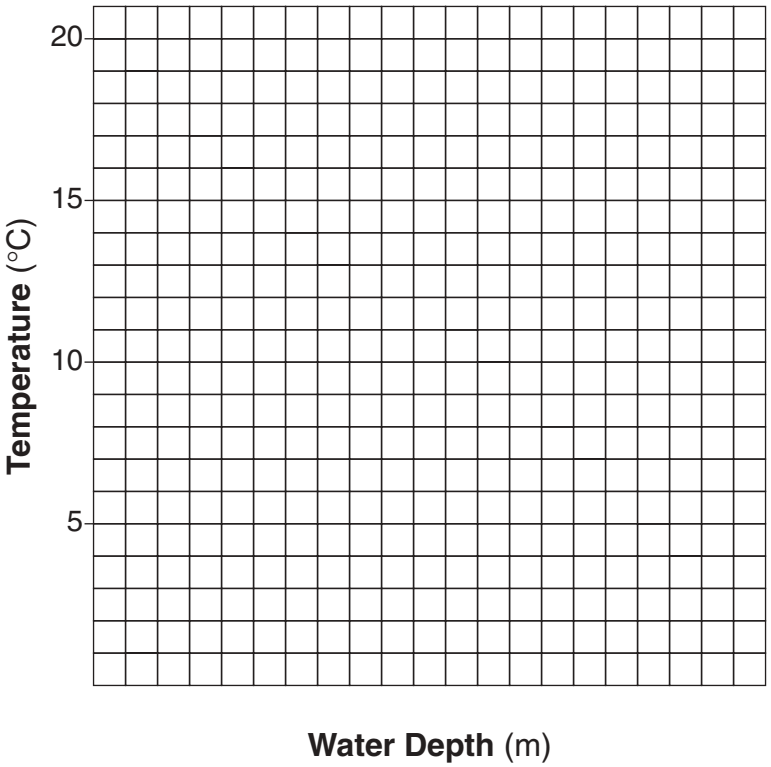
Water Temperatures at Various Depths

Water Depth (meters)	Temperature (°C)
50	18
75	15
100	12
150	5
200	4

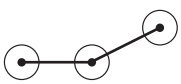
Directions (44–45): Using the information in the data table, construct a line graph on the grid following the directions below.



44 Mark an appropriate scale on the axis labeled "Water Depth (m)." [1]

44 ☐

45 Plot the data on the grid. Surround each point with a small circle and connect the points. [1]

Example: 

45 ☐

46 State the general relationship between temperature and water depth. [1]

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46 ☐

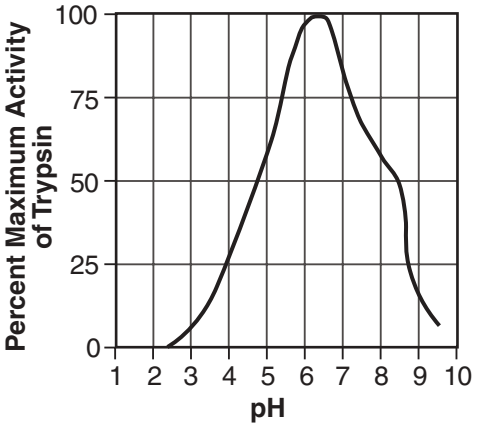
47 The approximate water temperature at a depth of 125 meters would be closest to

(1) 15°C (3) 8°C

(2) 13°C (4) 3°C

47 ☐

48 What is the dependent variable in the experiment summarized in the graph below? [1]



48 ☐

49 Why are offspring of organisms that reproduce sexually *not* genetically identical to their parents? [1]

49 ☐

50 How can the introduction of a foreign species lead to the extinction of species that are native to an area? [1]

50 ☐

Base your answers to questions 51 through 54 on the information below and on your knowledge of biology.

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Stem Cells

If skin is cut, the wound closes within days. If a leg is broken, the fracture will usually mend if the bone is set correctly. Almost all human tissue can repair itself to some extent. Much of this repair is due to the activity of stem cells. These cells resemble those of a developing embryo in their ability to reproduce repeatedly, forming exact copies of themselves. They may also form many other different kinds of cells. Stem cells in bone marrow offer a dramatic example. They can give rise to all of the structures in the blood: red blood cells, platelets, and various types of white blood cells. Other stem cells may produce the various components of the skin, liver, or intestinal lining.

The brain of an adult human can sometimes compensate for damage by making new connections among surviving nerve cells (neurons). For many years, most biologists believed that the brain could not repair itself because it lacked stem cells that would produce new neurons.

A recent discovery, however, indicates that a mature human brain does produce neurons routinely at one site, the hippocampus, an area important to memory and learning. This discovery raises the prospect that stem cells that make new neurons in one part of the brain might be found in other areas. If investigators can learn how to cause existing stem cells to produce useful numbers of functional nerve cells, it might be possible to correct a number of disorders involving damage to neurons such as Alzheimer's disease, Parkinson's disease, stroke, and brain injuries.

51 What is the process by which stem cells produce exact copies of themselves?

(1) cell division by mitosis

(2) cell division by meiosis

(3) sexual reproduction

(4) glucose synthesis

51 ☐

52 Stem cells may be similar to the cells of a developing embryo because both cell types can

(1) produce only one type of cell

(2) help the brain to learn and remember things

(3) divide and differentiate

(4) cause Alzheimer's and Parkinson's diseases

52 ☐

53 Until recently, many biologists thought that the brain could *not* repair itself because they thought it

(1) could not make new connections between neurons

(2) had DNA different from DNA in reproductive cells

(3) could form new cells only in certain areas of the brain

(4) lacked stem cells needed to produce new neurons

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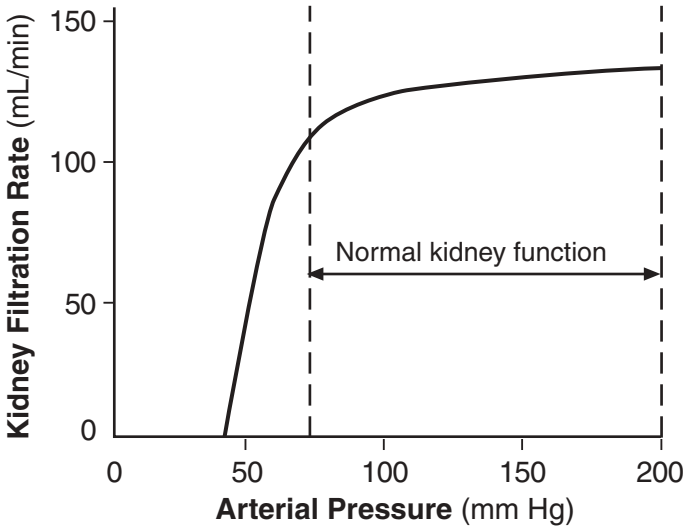
53 ☐

54 Describe how this new discovery concerning stem cells might help to treat diseases such as Alzheimer's disease or Parkinson's disease. [1]

54 ☐

55 The graph below shows the relationship between kidney function and arterial pressure in humans.



State how a steady decrease in arterial pressure will affect homeostasis in the human body. [1]

55 ☐

Base your answers to questions 56 through 58 on the diagram below illustrating one type of cellular communication and on your knowledge of biology.

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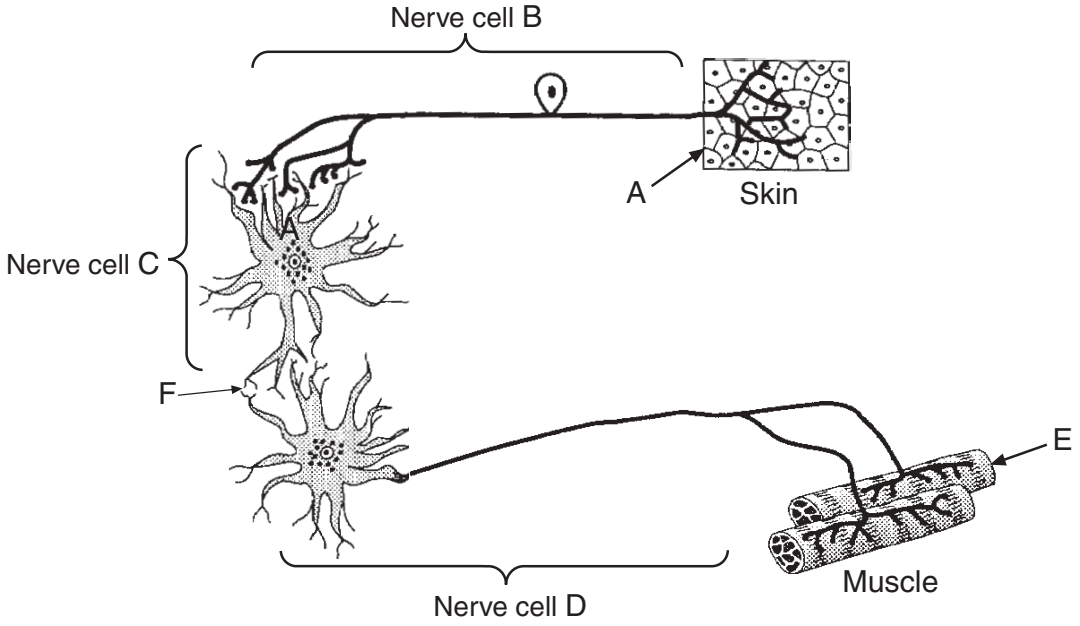

56 In region *F*, there is a space between nerve cells *C* and *D*. Cell *D* is usually stimulated to respond by

(1) a chemical produced by cell *C* moving to cell *D*

(2) the movement of a virus from cell *C* to cell *D*

(3) the flow of blood out of cell *C* to cell *D*

(4) the movement of material through a blood vessel that forms between cell *C* and cell *D*

56 ☐

57 If a stimulus is received by the cells at *A*, the cells at *E* will most likely use energy obtained from a reaction between

(1) fats and enzymes

(2) ATP and pathogens

(3) glucose and oxygen

(4) water and carbon dioxide

57 ☐

58 State *one* possible cause for the failure of muscle *E* to respond to a stimulus at *A*. [1]

_____

_____

_____

58 ☐

Base your answers to questions 59 through 62 on the diagrams of stages of succession below and on your knowledge of biology.

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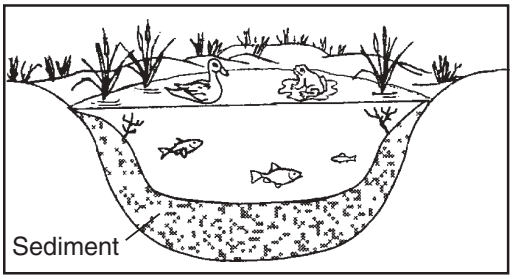
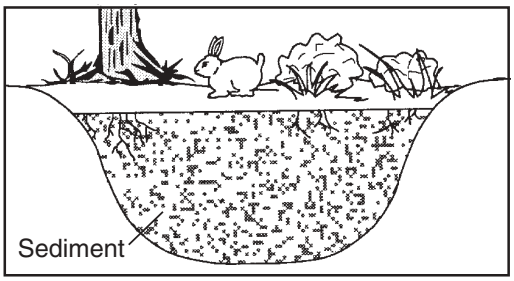
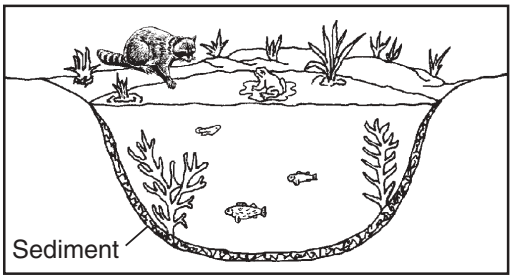


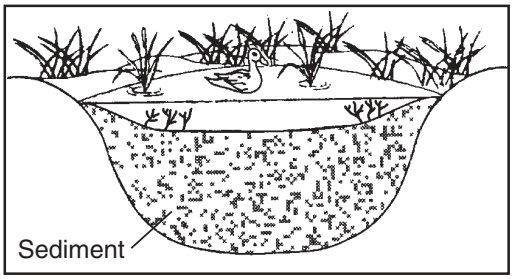
A



C



B



D

59 What is the correct sequence of these stages?

(1) $B \rightarrow A \rightarrow D \rightarrow C$

(2) $A \rightarrow D \rightarrow C \rightarrow B$

(3) $C \rightarrow B \rightarrow A \rightarrow D$

(4) $D \rightarrow A \rightarrow C \rightarrow B$

59 ☐

60 Which statement helps to explain this type of succession?

(1) Species will replace species until an unstable ecosystem is established.

(2) Species are replaced until a stable ecosystem is established.

(3) Humans replace all species and fill all niches.

(4) Changes in plant species are controlled only by the types of animals in an area.

60 ☐

61 Which organisms would most likely be harmed the most by the changes that occurred between these stages?

(1) trees

(2) raccoons

(3) fish

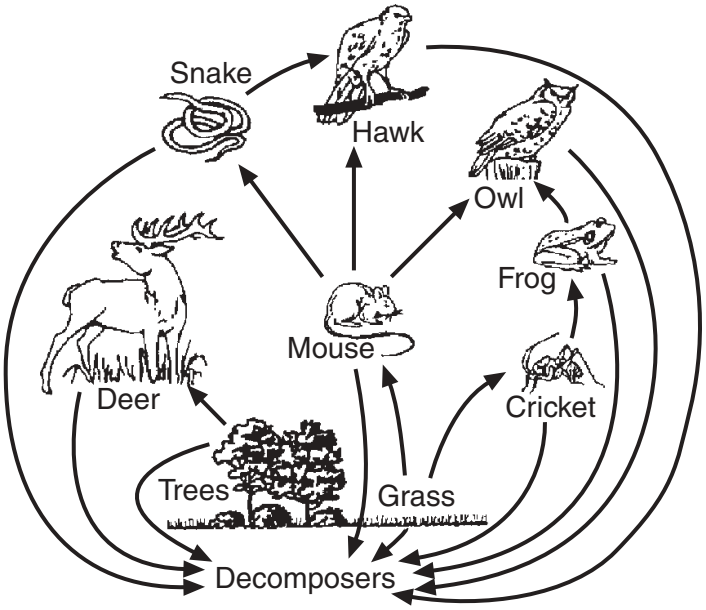
(4) rabbits

61 ☐

62 Identify *one* factor that could disrupt the final stage of this ecosystem. [1]

62 ☐

63 The diagram below represents a food web.



Select and record the name of *one* species in the food web, and explain how its removal could affect *one* of the other species in the food web. [1]

_____

_____

63 ☐

64 Identify *one* process that a producer can accomplish that a carnivore can *not* accomplish. [1]

_____

64 ☐

65 How do guard cells of a leaf help to maintain homeostasis in a plant? [1]

_____

_____

_____

65 ☐

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Part C

Answer all questions in this part. [20]

Directions (66–72): Record your answers in the spaces provided in this examination booklet.

66 Many people who are in favor of alternative medicine claim that large doses of vitamin C introduced into a vein speed up the healing of surgical wounds. Describe an experiment to test this hypothesis. Your answer must include at least:

- the difference between the experimental group of subjects and the control group [1]
- *two* conditions that must be kept constant in both groups [2]
- data that should be collected [1]
- an example of experimental results that would support the hypothesis [1]

For Teacher Use Only

66 ☐

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67 Choose *one* ecological problem from the list below.

Ecological Problems

Global warming
Destruction of the ozone shield
Loss of biodiversity

Discuss the ecological problem you chose. In your answer be sure to state:

- the problem you selected and *one* human action that may have caused the problem [1]
- *one* way in which the problem may negatively affect humans [1]
- *one* positive action that could be taken to reduce the problem [1]

67

68 There are a number of possible methods to control an invasion of gypsy moths in a city park. Several alternatives are listed below.

A A band of material can be placed around each tree trunk, preventing the larvae from crawling up the trunk. The larvae can be picked off by hand each day and destroyed.

B A chemical insecticide can be sprayed from an airplane. The chemical is effective and disappears rapidly, although some may run off into ponds and lakes.

C The trees can be sprayed with a liquid containing naturally occurring bacteria that feed on gypsy moths. These bacteria are believed to be harmless, but the spray is very expensive.

D No action is taken. This allows nature to take its course, which results in major changes in the area concerned. The damage can then be repaired.

Write the letter of the method you would use and give an ecologically sound reason for your choice. [1]

68

Base your answer to question 69 on one of the cartoons below, which refer to certain concepts of natural selection, and on your knowledge of biology.

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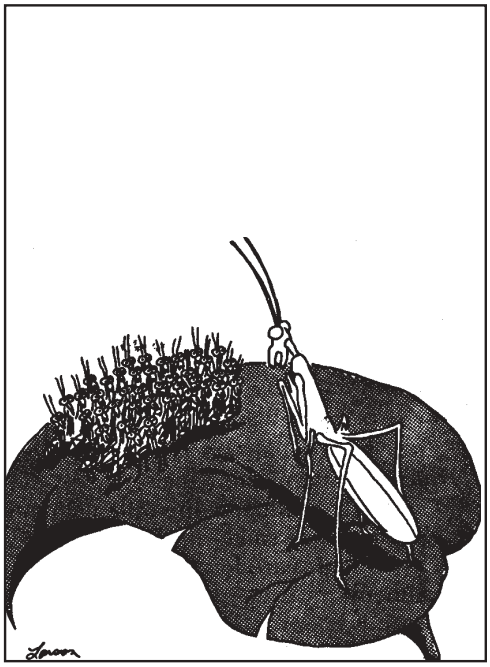
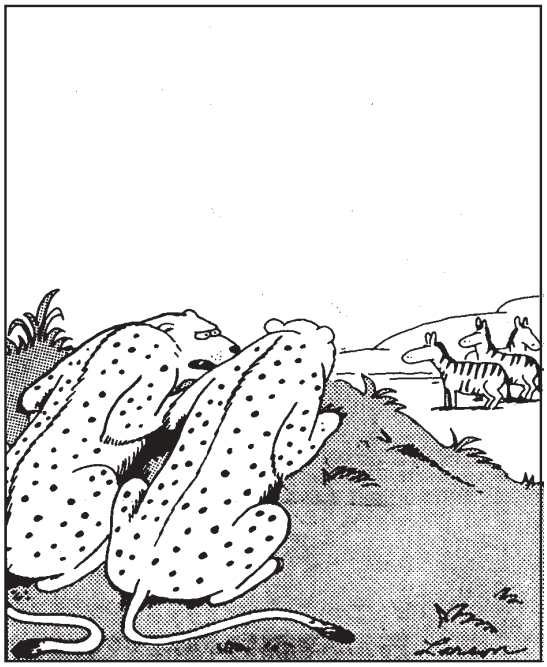
Cartoon 1



"Of course, long before you mature, most of you will be eaten."

Cartoon 2



"Listen... I'm fed up with this 'weeding out the sick and the old' business... I want something in its prime."

69 Choose *one* cartoon and write its number in the space below. Identify *one* concept represented in that cartoon, and explain how this concept supports the theory of natural selection. Your answer must:

- identify *one* concept represented in the cartoon you choose [1]
- briefly explain the concept you identified [1]
- explain the relationship between this concept and the process of natural selection [1]

Cartoon Number: _____

69

Base your answers to questions 70 and 71 on the passage below and on your knowledge of biology.

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Plastics Produced by Plants

Plastics are generally thought of as materials made exclusively by human technology. However, some plants and bacteria naturally make small amounts of plastics. Furthermore, unlike synthetic plastics, plastics produced by plants and bacteria break down easily in the environment. Synthetic plastics, which are produced from petroleum, are the fastest growing type of waste in the United States. Researchers are learning how to greatly increase the amount of plastic made by plants. One day farmers may grow crops of plastic-producing plants in addition to wheat and corn crops.

A researcher at the Carnegie Institution of Washington was one of the first to attempt to use plants to make plastics. He knew that a common bacterium, known as *Alcaligenes eutrophus*, naturally produced a plastic called polyhydroxybutyrate (PHB), which resembles the type of plastic used to make garbage bags.

However, growing bacteria to produce plastic can be expensive. In order to determine if genetically engineered plants could make plastic, genes were isolated from *A. eutrophus* and inserted into plants. After a few tries, the researchers were able to produce healthy plastic-producing plants.

70 By what process were the plastic-producing plants developed? [1]

_____

_____ 70 ☐

71 Explain why the use of the plastic produced by these plants is better for the environment than plastic produced by human technology, and explain why this plastic would be a benefit to future generations. [2]

_____

_____

_____

_____

_____

_____ 71 ☐

72 Systems in the human body interact to maintain homeostasis. Four of these systems are listed below.

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Body Systems

circulatory

digestive

respiratory

excretory

a Select *two* of the systems listed. Identify each system selected and state its function in helping to maintain homeostasis in the body. [2]

72a

b Explain how a malfunction of *one* of the four systems listed disrupts homeostasis and how that malfunction could be prevented or treated. In your answer be sure to:

- name the system and state *one* possible malfunction of that system [1]
- explain how the malfunction disrupts homeostasis [1]
- describe *one* way the malfunction could be prevented or treated [1]

72b

Tear Here

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

LIVING ENVIRONMENT

Wednesday, June 19, 2002 — 9:15 a.m. to 12:15 p.m., only

ANSWER SHEET

Student . . . . . Sex: ☐ Female ☐ Male

Teacher . . . . . .

School . . . . . Grade . . . . . .

Part	Maximum Score	Student's Score
A	35	
B	30	
C	20	
Total Raw Score (maximum Raw Score: 85)		
Final Score (from conversion chart)		

Raters' Initials

Rater 1 . . . . . Rater 2 . . . . . .

Record your answers to Part A on this answer sheet.

Part A

1	13	25 . . . . .
2	14	26 . . . . .
3	15	27 . . . . .
4	16	28 . . . . .
5	17	29 . . . . .
6	18	30 . . . . .
7	19	31 . . . . .
8	20	32 . . . . .
9	21	33 . . . . .
10	22	34 . . . . .
11	23	35 . . . . .
12	24	

The declaration below must be signed when you have completed the examination.

I do hereby affirm, at the close of this examination, that I had no unlawful knowledge of the questions or answers prior to the examination and that I have neither given nor received assistance in answering any of the questions during the examination.

Signature

Tear Here

Tear Here

Tear Here