The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

LIVING ENVIRONMENT

Friday, June 18, 2004 — 1:15 to 4:15 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 and Part B–1. 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.

You are to answer all questions in all parts of this examination. Write your answers to the Part A and Part B–1 multiple-choice questions on the separate answer sheet. Write your answers for the questions in Parts B–2, C, and D 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 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.

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, write on your separate answer sheet the *number* of the word or expression that, of those given, best completes the statement or answers the question.

1 Cloning an individual usually produces organisms that

(1) contain dangerous mutations
(2) contain identical genes
(3) are identical in appearance and behavior
(4) produce enzymes different from the parent

2 Which statement best describes the term *theory* as used in the gene-chromosome theory?

(1) A theory is never revised as new scientific evidence is presented.
(2) A theory is an assumption made by scientists and implies a lack of certainty.
(3) A theory refers to a scientific explanation that is strongly supported by a variety of experimental data.
(4) A theory is a hypothesis that has been supported by one experiment performed by two or more scientists.

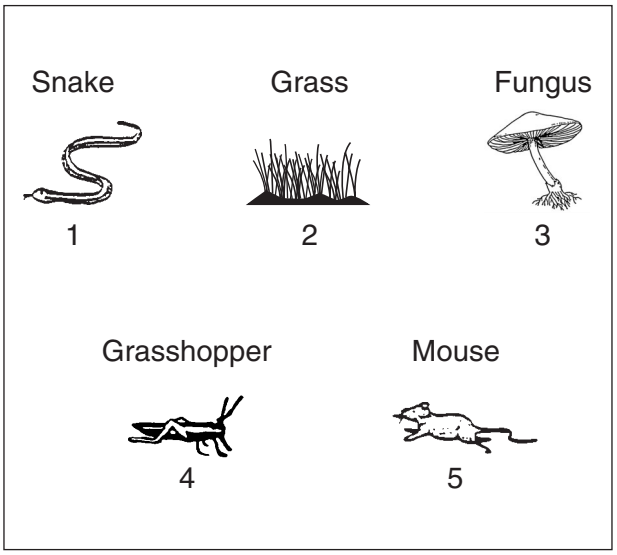
3 Which two systems are most directly involved in providing molecules needed for the synthesis of fats in human cells?

(1) digestive and circulatory
(2) excretory and digestive
(3) immune and muscular
(4) reproductive and circulatory

4 Which statements best describe the relationship between the terms *chromosomes*, *genes*, and *nuclei*?

(1) Chromosomes are found on genes. Genes are found in nuclei.
(2) Chromosomes are found in nuclei. Nuclei are found in genes.
(3) Genes are found on chromosomes. Chromosomes are found in nuclei.
(4) Genes are found in nuclei. Nuclei are found in chromosomes.

5 Organisms from a particular ecosystem are shown below.



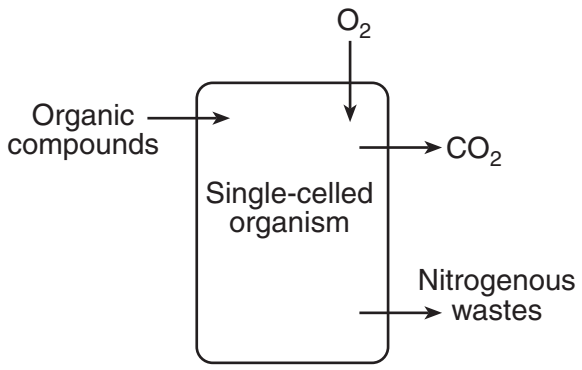
Which statement concerning an organism in this ecosystem is correct?

(1) Organism 2 is heterotrophic.
(2) Organism 3 helps recycle materials.
(3) Organism 4 obtains all of its nutrients from an abiotic source.
(4) Organism 5 must obtain its energy from organism 1.

6 In a cell, information that controls the production of proteins must pass from the nucleus to the

(1) cell membrane
(2) chloroplasts
(3) mitochondria
(4) ribosomes

7 The arrows in the diagram below indicate the movement of materials into and out of a single-celled organism.



The movements indicated by all the arrows are directly involved in

(1) the maintenance of homeostasis
(2) photosynthesis, only
(3) excretion, only
(4) the digestion of minerals

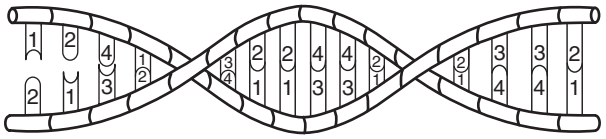
8 The chart below shows relationships between genes, the environment, and coloration of tomato plants.

Inherited Gene	Environmental Condition	Final Appearance
A	Light	Green
B	Light	White
A	Dark	White
B	Dark	White

Which statement best explains the final appearance of these tomato plants?

(1) The expression of gene *A* is not affected by light.
(2) The expression of gene *B* varies with the presence of light.
(3) The expression of gene *A* varies with the environment.
(4) Gene *B* is expressed only in darkness.

9 The diagram below represents a section of a molecule that carries genetic information.



The pattern of numbers represents

(1) a sequence of paired bases
(2) the order of proteins in a gene
(3) folds of an amino acid
(4) positions of gene mutations

10 In the human pancreas, acinar cells produce digestive enzymes and beta cells produce insulin. The best explanation for this is that

(1) a mutation occurs in the beta cells to produce insulin when the sugar level increases in the blood
(2) different parts of an individual's DNA are used to direct the synthesis of different proteins in different types of cells
(3) lowered sugar levels cause the production of insulin in acinar cells to help maintain homeostasis
(4) the genes in acinar cells came from one parent while the genes in beta cells came from the other parent

11 If mitotic cell division is the only way a particular species of single-celled organism can reproduce, it is most likely that

(1) mutations can *not* occur in this species
(2) the rate of evolution in this species is slower than in one that reproduces sexually
(3) the number of organisms of this species in an area will remain constant
(4) this species belongs to the animal kingdom

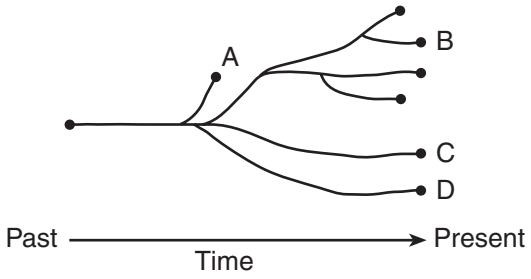
12 In order for new species to develop, there *must* be a change in the

(1) temperature of the environment
(2) migration patterns within a population
(3) genetic makeup of a population
(4) rate of succession in the environment

13 Which statement is *not* part of the concept of natural selection?

(1) Individuals that possess the most favorable variations will have the best chance of reproducing.
(2) Variation occurs among individuals in a population.
(3) More individuals are produced than will survive.
(4) Genes of an individual adapt to a changing environment.

14 The diagram below shows the evolution of some different species of flowers.



Which statement about the species is correct?

(1) Species *A*, *B*, *C*, and *D* came from different ancestors.
(2) Species *C* evolved from species *B*.
(3) Species *A*, *B*, and *C* can interbreed successfully.
(4) Species *A* became extinct.

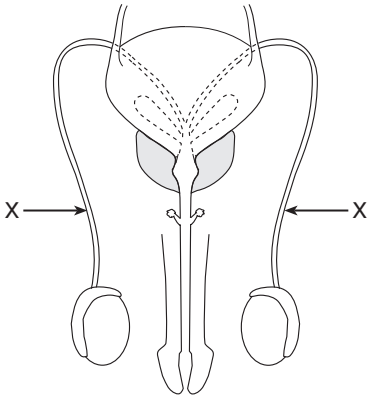
15 In sexually reproducing species, the number of chromosomes in each body cell remains the same from one generation to the next as a direct result of

(1) meiosis and fertilization
(2) mitosis and mutation
(3) differentiation and aging
(4) homeostasis and dynamic equilibrium

16 One function of the placenta in a human is to

(1) surround the embryo and protect it from shock
(2) allow for mixing of maternal blood with fetal blood
(3) act as the heart of the fetus, pumping blood until the fetus is born
(4) permit passage of nutrients and oxygen from the mother to the fetus

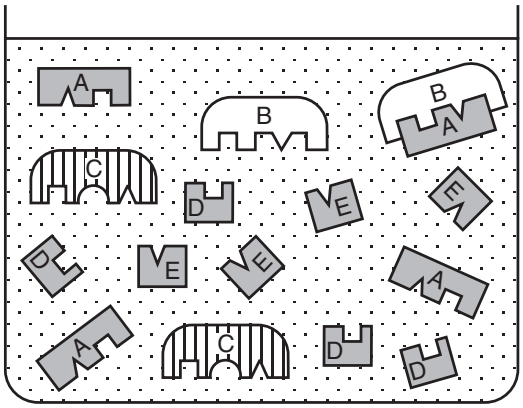
17 Some body structures of a human male are represented in the diagram below.



An obstruction in the structures labeled *X* would directly interfere with the

(1) transfer of sperm to a female
(2) production of sperm
(3) production of urine
(4) transfer of urine to the external environment

18 The diagram below represents a beaker containing a solution of various molecules involved in digestion.



Which structures represent products of digestion?

(1) *A* and *D*
(2) *B* and *C*
(3) *B* and *E*
(4) *D* and *E*

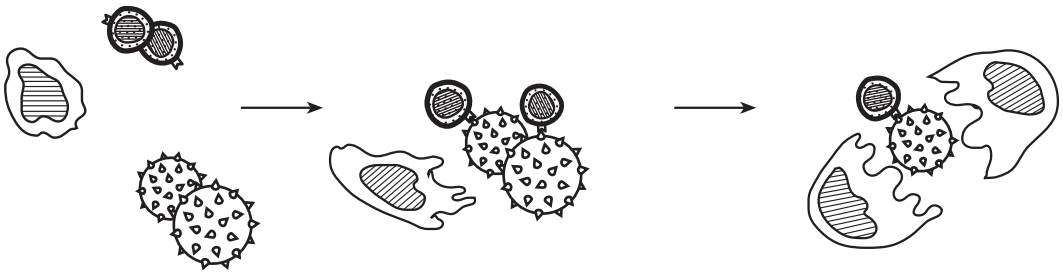
Base your answer to question 19 on the chart below and on your knowledge of biology.

A	B	C
The diversity of multicellular organisms increases.	Simple, single-celled organisms appear.	Multicellular organisms begin to evolve.

19 According to most scientists, which sequence best represents the order of biological evolution on Earth?

(1) $A \rightarrow B \rightarrow C$
(2) $B \rightarrow C \rightarrow A$
(3) $B \rightarrow A \rightarrow C$
(4) $C \rightarrow A \rightarrow B$

20 The diagram below represents what can happen when homeostasis in an organism is threatened.



Which statement provides a possible explanation for these events?

(1) Antibiotics break down harmful substances by the process of digestion.
(2) Some specialized cells mark and other cells engulf microbes during immune reactions.
(3) Embryonic development of essential organs occurs during pregnancy.
(4) Cloning removes abnormal cells produced during differentiation.

21 Arrows *A*, *B*, and *C* in the diagram below represent the processes necessary to make the energy stored in food available for muscle activity.

Food $\xrightarrow{A}$ Simpler molecules $\xrightarrow{B}$ Mitochondria $\xrightarrow{C}$ ATP in muscle cells

The correct sequence of processes represented by *A*, *B*, and *C* is

(1) diffusion → synthesis → active transport
(2) digestion → diffusion → cellular respiration
(3) digestion → excretion → cellular respiration
(4) synthesis → active transport → excretion

22 Which statement best describes what will most likely happen when an individual receives a vaccination containing a weakened pathogen?

(1) The ability to fight disease will increase due to antibodies received from the pathogen.
(2) The ability to fight disease caused by the pathogen will increase due to antibody production.
(3) The ability to produce antibodies will decrease after the vaccination.
(4) The ability to resist most types of diseases will increase.

23 When a certain plant is without water for an extended period of time, guard cells close openings in the leaves of the plant. This activity conserves water and illustrates

(1) cellular communication involving the action of nerve cells and receptor sites
(2) an increase in rate of growth due to a low concentration of water
(3) maintenance of a dynamic equilibrium through detection and response to stimuli
(4) a response to one biotic factor in the environment

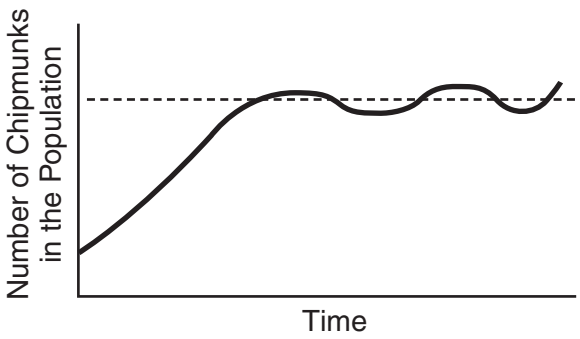
24 Which process usually uses carbon dioxide molecules?

(1) cellular respiration
(2) asexual reproduction
(3) active transport
(4) autotrophic nutrition

25 A particular species of unicellular organism inhabits the intestines of termites, where the unicellular organisms are protected from predators. Wood that is ingested by the termites is digested by the unicellular organisms, forming food for the termites. The relationship between these two species can be described as

(1) harmful to both species
(2) parasite/host
(3) beneficial to both species
(4) predator/prey

26 A population of chipmunks migrated to an environment where they had little competition. Their population quickly increased but eventually stabilized as shown in the graph.



Which statement best explains why the population stabilized?

(1) Interbreeding between members of the population increased the mutation rate.
(2) The population size became limited due to factors such as availability of food.
(3) An increase in the chipmunk population caused an increase in the producer population.
(4) A predator species came to the area and occupied the same niche as the chipmunks.

27 Which factor is a major cause of global warming?

(1) increased burning of fuels
(2) increased number of green plants
(3) decreased mineral availability
(4) decreased carbon dioxide in the atmosphere

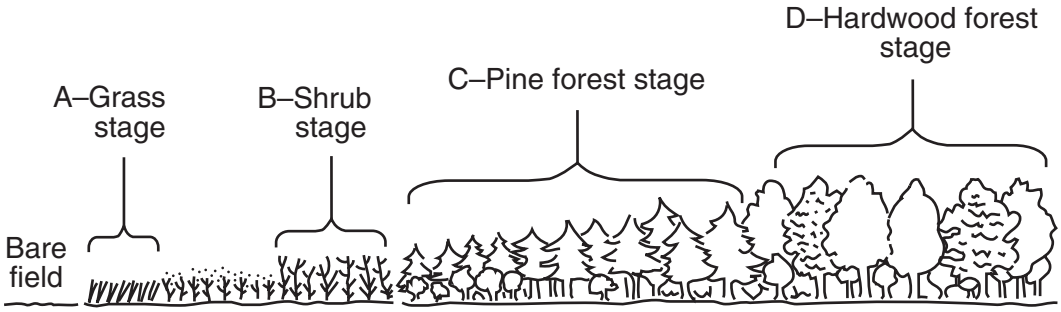
28 If humans remove carnivorous predators such as wolves and coyotes from an ecosystem, what will probably be the first observable result?

(1) The natural prey will die off.
(2) Certain plant populations will increase.
(3) Certain herbivores will exceed carrying capacity.
(4) The decomposers will fill the predator niche.

29 Which situation has had the most *negative* effect on the ecosystems of Earth?

(1) use of air pollution controls
(2) use of natural predators to control insect pests
(3) recycling glass, plastic, and metals
(4) increasing human population

30 Stage *D* in the diagram below is located on land that was once a bare field.



The sequence of stages leading from bare field to stage *D* best illustrates the process known as

(1) replication
(2) recycling
(3) feedback
(4) succession

Part B–1

Answer all questions in this part. [10]

Directions (31–40): 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.

Base your answers to questions 31 through 34 on the passage below and on your knowledge of biology.

> . . . Some of the most common and deadly bacteria do their mischief by forming a sticky scum called biofilm. Individually, the microbes are easy to control, but when they organize themselves into biofilms they can become deadly, said Dr. Barbara Iglewski of the University of Rochester. . . .
>
> Biofilms are actually intricately organized colonies of billions of microbes, all working in a coordinated way to defend against attack and to pump out a toxin that can be deadly.
>
> Once they are organized, the bacteria are highly resistant to antibiotics and even strong detergents often cannot wash them away or kill them.
>
> Iglewski and colleagues from Montana State University and the University of Iowa report in *Science* that they discovered how the microbes in the colonies communicate and found that once this conversation is interrupted, the deadly bugs can be easily washed away.
>
> Using *Pseudomonas aeruginosa*, a common bacteria that is a major infection hazard in hospitals and among cystic fibrosis patients, the researchers isolated a gene that the bacteria uses to make a communications molecule. The molecule helps the microbes organize themselves into a biofilm — a complex structure that includes tubes to carry in nutrients and carry out wastes, including deadly toxins.
>
> In their study, the researchers showed that if the gene that makes the communications molecule was blocked, the *Pseudomonas aeruginosa* could form only wimpy [weak], unorganized colonies that could be washed away with just a soap that has no effect on a healthy colony. . . .

Adapted from: Paul Recer, "Researchers find new means to disrupt attack by microbes," *The Daily Gazette*, April 26, 1998.

31 What is one characteristic of a biofilm?

(1) presence of tubes to transport materials into and out of the colony
(2) presence of a nervous system for communication within the colony
(3) ease with which colonies can be broken down by detergents
(4) lack of resistance of the bacterial colony to antibiotics

32 Which statement best describes *Pseudomonas aeruginosa* bacteria?

(1) They cause mutations in humans.
(2) They are easy to control.
(3) They cause major infection problems in hospitals.
(4) They are deadly only to people with cystic fibrosis.

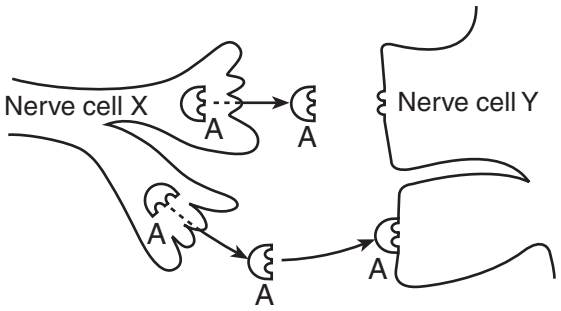
33 The tubes in biofilms function much like the human

(1) muscular and nervous systems
(2) circulatory and excretory systems
(3) digestive and endocrine systems
(4) reproductive and respiratory systems

34 Bacteria that form biofilms may be controlled most effectively by

(1) antibiotics
(2) detergents
(3) cutting the tubes through which the bacteria communicate
(4) blocking the expression of a gene that helps the colonies to organize

Base your answers to questions 35 through 37 on the diagram below and on your knowledge of biology.



35 The process represented in the diagram best illustrates

(1) cellular communication
(2) muscle contraction
(3) extraction of energy from nutrients
(4) waste disposal

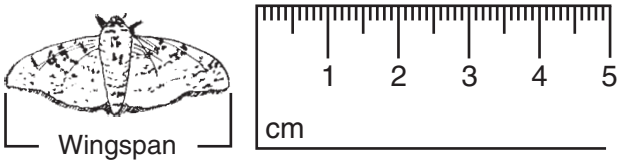
36 Which statement best describes the diagram?

(1) Nerve cell *X* is releasing receptor molecules.
(2) Nerve cell *Y* is signaling nerve cell *X*.
(3) Nerve cell *X* is attaching to nerve cell *Y*.
(4) Nerve cell *Y* contains receptor molecules for substance *A*.

37 A drug is developed that, due to its molecular shape, blocks the action of substance *A*. Which shape would the drug molecule most likely resemble?

(1) (2) (3) (4)

38 A peppered moth and part of a metric ruler are represented in the diagram below.



Which row in the chart below best represents the ratio of body length to wingspan of the peppered moth?

Row	Body Length:Wingspan
(1)	1:1
(2)	2:1
(3)	1:2
(4)	2:2

39 Enzymes are used in moving sections of DNA that code for insulin from the pancreas cells of humans into a certain type of bacterial cell. This bacterial cell will reproduce, giving rise to offspring that are able to form

(1) human insulin
(2) antibodies against insulin
(3) enzymes that digest insulin
(4) a new type of insulin

40 To determine which colors of light are best used by plants for photosynthesis, three types of underwater green plants of similar mass were subjected to the same intensity of light of different colors for the same amount of time. All other environmental conditions were kept the same. After 15 minutes, a video camera was used to record the number of bubbles of gas each plant gave off in a 30-second period of time. Each type of plant was tested six times. The average of the data for each plant type is shown in the table below.

Average Number of Bubbles Given Off in 30 Seconds

Plant Type	Red Light	Yellow Light	Green Light	Blue Light
Elodea	35	11	5	47
Potamogeton	48	8	2	63
Utricularia	28	9	6	39

Which statement is a valid inference based on the data?

(1) Each plant carried on photosynthesis best in a different color of light.
(2) Red light is better for photosynthesis than blue light.
(3) These types of plants make food at the fastest rates with red and blue light.
(4) Water must filter out red and green light.

Part B–2

Answer all questions in this part. [15]

Directions (41–54): 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.

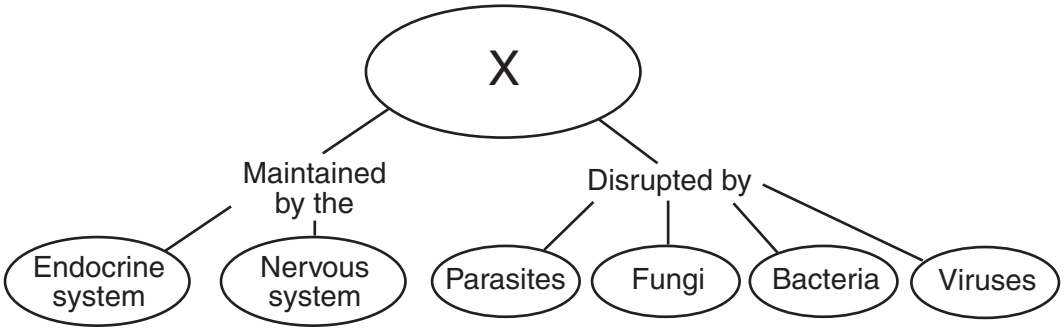
For Teacher Use Only

41 Using appropriate information, fill in spaces *A* and *B* in the chart below. In space *A* identify an organ in the human body where molecules diffuse into the blood. In space *B* identify a specific molecule that diffuses into the blood at this organ. [2]

An organ in the human body where molecules diffuse into the blood	A specific molecule that diffuses into the blood at this organ
A	B

41 ☐

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



42 What term or phrase does letter *X* most likely represent? [1]

42 ☐

Base your answers to questions 43 through 46 on the information below and on your knowledge of biology.

For Teacher Use Only

Three students each added equal volumes of pond water to four beakers and placed each beaker in a different water bath. Each student maintained the water baths at temperatures shown in the data table. The students then added an equal number of water fleas to each of their four beakers. After one hour, the students used microscopes to determine the average heart rate of the water fleas. The procedure was repeated for a total of three trials at each temperature. The results of the investigation are summarized in the data table.

Water Flea Heart Rate

Water Temperature (°C)	**Average Water Flea Heart Rate** (beats/minute)
5	40
15	119
25	205
35	280

Directions (43–44): Using the information in the data table, construct a line graph on the grid provided, following the directions below.

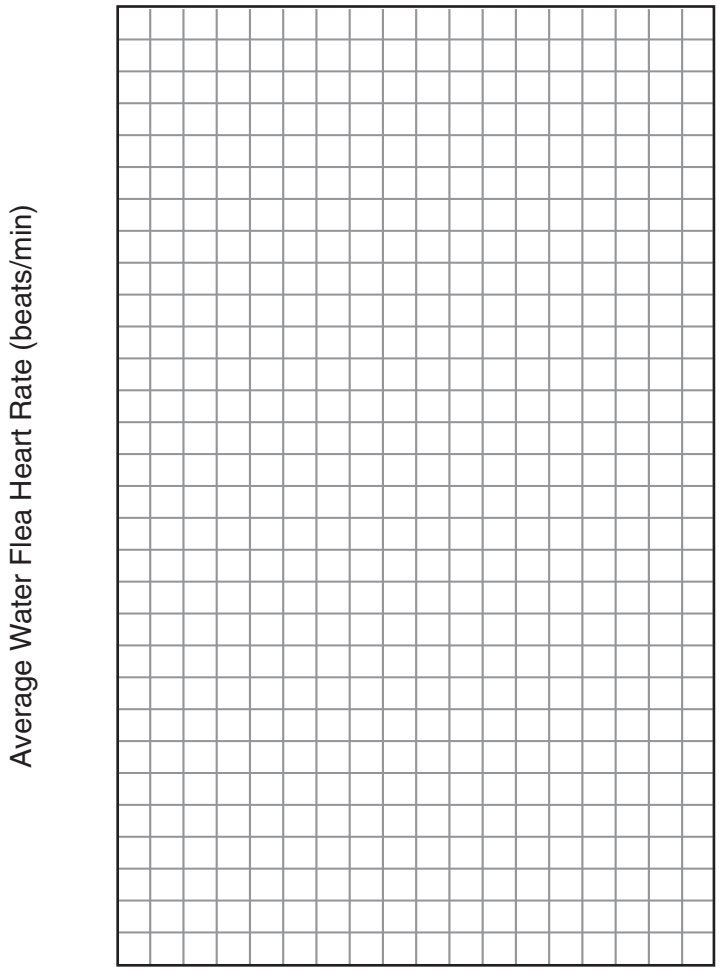
43 Mark an appropriate scale on each labeled axis. [1]

44 Plot the data for the average heart rate on the grid. Surround each point with a small circle and connect the points. [1]

Example: 

For Teacher Use Only

The Effect of Temperature on Water Flea Heart Rate



43 ☐

44 ☐

45 The independent variable in this investigation is the

(1) number of trials

(2) number of water fleas

(3) temperature of the water

(4) average heart rate

45 ☐

46 State the relationship between temperature and heart rate in water fleas. [1]

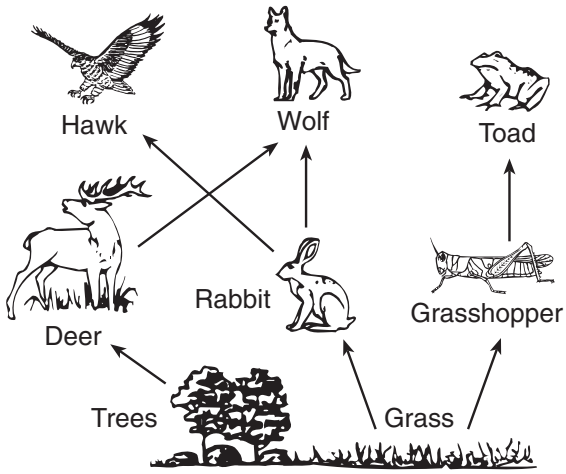
_____

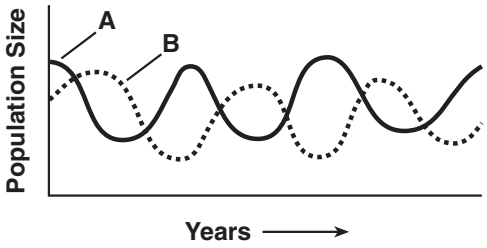
_____

46 ☐

Base your answers to questions 47 through 49 on the food web and graph below and on your knowledge of biology. The graph represents the interaction of two different populations, *A* and *B*, in the food web.

For Teacher Use Only





47 Population *A* is made up of living animals. The members of population *B* feed on these living animals. The members of population *B* are most likely

(1) scavengers

(2) autotrophs

(3) predators

(4) parasites

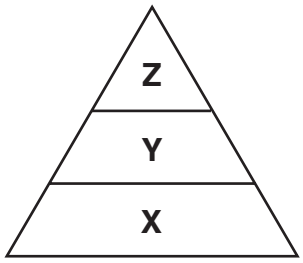
47 ☐

48 Identify one heterotroph from the food web that could be a member of population *A*. [1]

_____

48 ☐

49 An energy pyramid is shown below.



Identify one organism shown in the food web that would be found at level *X*. [1]

_____

49 ☐

Base your answers to questions 50 through 52 on the information and chart below and on your knowledge of biology.

For Teacher Use Only

In DNA, a sequence of three bases is a code for the placement of a certain amino acid in a protein chain. The table below shows some amino acids with their abbreviations and DNA codes.

Amino Acid	Abbreviation	DNA Code
Phenylalanine	Phe	AAA, AAG
Tryptophan	Try	ACC
Serine	Ser	AGA, AGG, AGT, AGC, TCA, TCG
Valine	Val	CAA, CAG, CAT, CAC
Proline	Pro	GGA, GGG, GGT, GGC
Glutamine	Glu	GTT, GTC
Threonine	Thr	TGA, TGG, TGT, TGC
Asparagine	Asp	TTA, TTG

50 Which amino acid chain would be produced by the DNA base sequence below?

C-A-A-G-T-T-A-A-A-T-T-A-T-T-G-T-G-A

(1) Val—Glu—Phe—Asp—Thr—Asp

(2) Val—Pro—Phe—Asp—Asp—Thr

(3) Val—Glu—Phe—Asp—Asp—Thr

(4) Val—Glu—Phe—Thr—Asp—Asp

50 ☐

51 Identify one environmental factor that could cause a base sequence in DNA to be changed to a different base sequence. [1]

_____

51 ☐

52 Describe how a protein would be changed if a base sequence mutates from GGA to TGA. [1]

_____

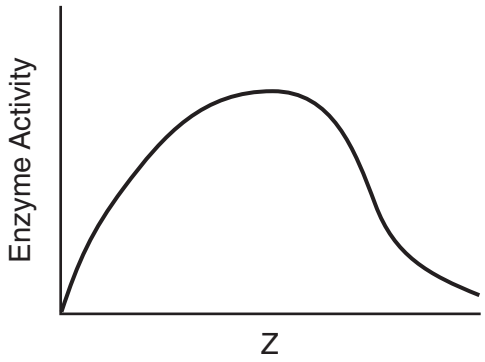
_____

_____

52 ☐

53 An incomplete graph is shown below.

Effect of Z on Enzyme Activity



What label could appropriately be used to replace letter Z on the axis? [1]

_____

53 ☐

54 A farmer has been growing only corn in his fields for several years. Each year the corn stalks were cut off near the ground and processed to be used as food for cattle. The farmer observed that with each passing year, corn production in his fields decreased. Explain why removing the dead corn stalks reduced corn production in these fields. [1]

_____

_____

54 ☐

For Teacher Use Only

Part C

Answer all questions in this part. [17]

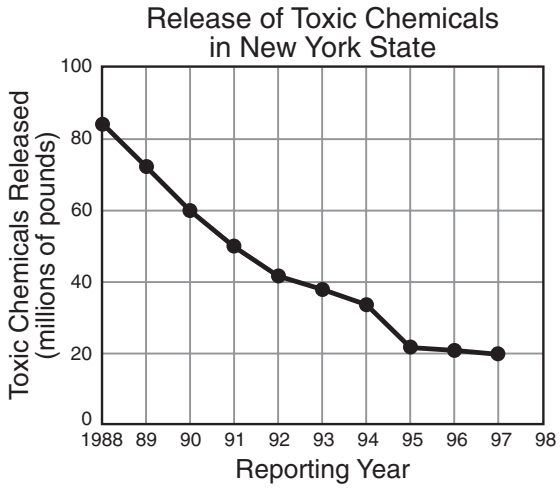
Directions (55–60): Record your answers in the spaces provided in this examination booklet.

For Teacher Use Only

Base your answers to questions 55 through 57 on the information and graph below.

Reducing toxic chemicals released into the environment often requires laws. When making decisions about whether or not to support the passing of such laws, individuals must weigh the benefits against the potential risks if the law is not passed.

The amounts of toxic chemicals released into the environment of New York State over a ten-year period are shown in the graph below.



55 State one possible *negative* effect of passing a law to reduce the release of toxic chemicals. [1]

_____

_____ 55 ☐

56 State one possible explanation for why the amount of toxic chemicals released remained relatively constant between 1995 and 1997. [1]

_____

_____ 56 ☐

57 State one other type of environmental problem that has been reduced by passing laws. [1]

_____

_____ 57 ☐

58 A human is a complex organism that develops from a zygote. Briefly explain some of the steps in this developmental process. In your answer be sure to:

- explain how a zygote is formed [1]
- compare the genetic content of the zygote to that of a body cell of the parents [1]
- identify one developmental process involved in the change from a zygote into an embryo [1]
- identify the structure in which fetal development usually occurs [1]
- identify *two* factors that can affect fetal development and explain how each factor affects fetal development [2]

For Teacher Use Only

58

59 AIDS is an infectious disease that has reached epidemic proportions. Describe the nature of this disease and identify *two* ways to prevent or control the spread of infectious diseases, such as AIDS. In your response be sure to include:

- the type of pathogen that causes AIDS [1]
- the system of the body that is attacked by that pathogen [1]
- the effect on the body when this system is weakened by AIDS [1]
- *two* ways to prevent or control the spread of infectious diseases, such as AIDS [2]

59 ☐

60 Human activities continue to place strains on the environment. One of these strains on the environment is the loss of biodiversity. Explain what this problem is and describe some ways humans are involved in both the problem and the possible solutions. In your answer be sure to:

- state the meaning of the term *biodiversity* [1]
- state one *negative* effect on humans if biodiversity continues to be lost [1]
- suggest one practice that could be used to preserve biodiversity in New York State [1]

For Teacher Use Only

60

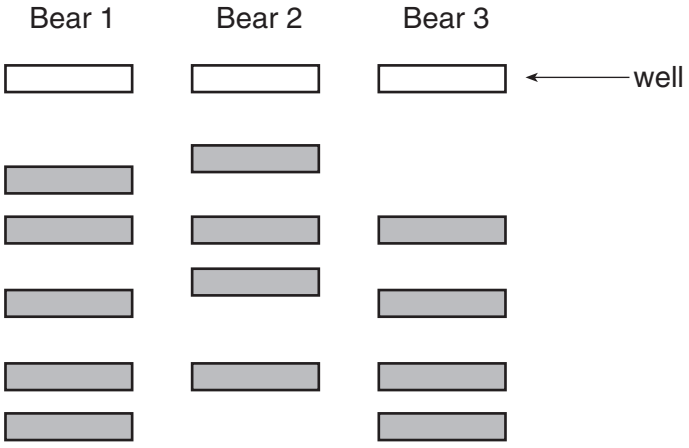
Part D

Answer all questions in this part. [13]

Directions (61–67): 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.

Base your answers to questions 61 through 64 on the information and diagram below and on your knowledge of biology.

The diagram below shows the results of a test that was done using DNA samples from three bears of different species. Each DNA sample was cut into fragments using a specific enzyme and placed in the wells as indicated below. The DNA fragments were then separated using gel electrophoresis.



61 Which *two* bears are most closely related? Support your answer with data from the test results. [2]

_____

_____

61 ☐

62 Identify one additional way to determine the evolutionary relationship of these bears. [1]

_____

_____

62 ☐

For Teacher Use Only

63 Gel electrophoresis is used to separate DNA fragments on the basis of their

(1) size

(2) color

(3) functions

(4) chromosomes

For Teacher Use Only

63 ☐

64 Identify one procedure, other than electrophoresis, that is used in the laboratory to separate the different types of molecules in a liquid mixture. [1]

_____

64 ☐

65 On a television talk show, a guest claims that people who exercise vigorously for 15 minutes or more every day are able to solve math problems more rapidly than people who have no vigorous exercise in their daily routine.

Describe a controlled experiment that could be conducted to test this claim. In your description be sure to:

- state the purpose of the experiment [1]
- state why the sample to be used should be large [1]
- describe how the experimental group will be treated and how the control group will be treated [2]
- state the specific data to be collected during the experiment [1]
- state one way to determine if the results support the claim [1]

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

65 ☐

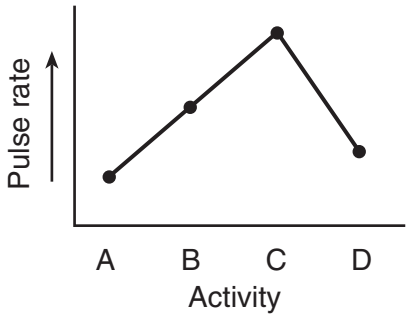
66 A student measures his pulse rate while he is watching television and records it. Next, he walks to a friend's house nearby and when he arrives, measures and records his pulse rate again. He and his friend then decide to run to the mall a few blocks away. On arriving at the mall, the student measures and records his pulse rate once again. Finally, after sitting and talking for a half hour, the student measures and records his pulse rate for the last time.

Which graph below best illustrates the expected changes in his pulse rate according to the activities described above?

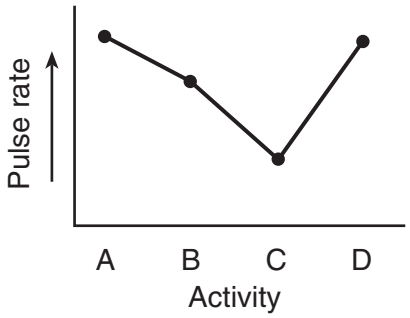
Key:Activity

A = after watching television
B = after walking to a friend's house
C = after running to the mall
D = after sitting and talking

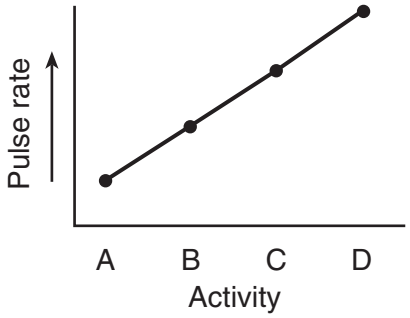
(1)



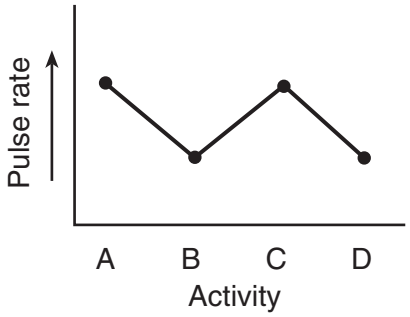
(2)



(3)



(4)

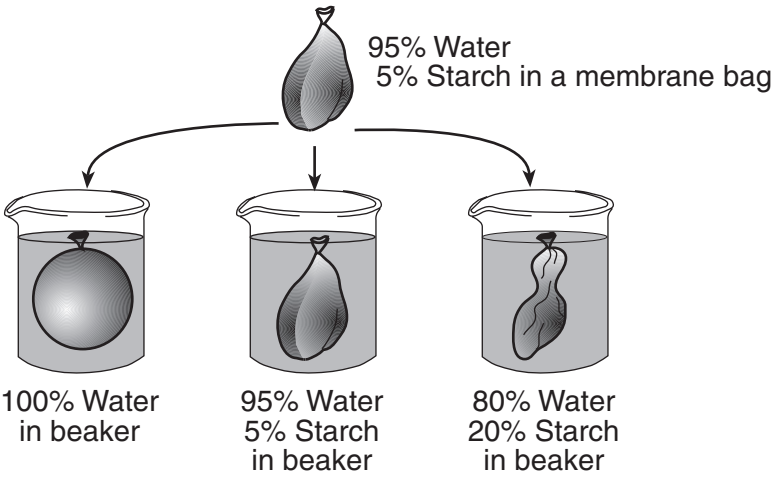


For Teacher Use Only

66 ☐

For Teacher Use Only

67 An investigation was set up to study the movement of water through a membrane. The results are shown in the diagram below.



Based on these results, which statement correctly predicts what will happen to red blood cells when they are placed in a beaker containing a water solution in which the salt concentration is much higher than the salt concentration in the red blood cells?

(1) The red blood cells will absorb water and increase in size.

(2) The red blood cells will lose water and decrease in size.

(3) The red blood cells will first absorb water, then lose water and maintain their normal size.

(4) The red blood cells will first lose water, then absorb water, and finally double in size.

67 ☐

Tear Here

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

LIVING ENVIRONMENT

Friday, June 18, 2004 — 1:15 to 4:15 p.m., only

ANSWER SHEET

Student ..... Sex: ☐ Female ☐ Male

Teacher .....

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

Part	Maximum Score	Student's Score
A	30	
B–1	10	
B–2	15	
C	17	
D	13	

Total Raw Score (maximum Raw Score: 85) ☐

Final Score (from conversion chart) ☐

Raters' Initials

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

Record your answers to Part A and Part B–1 on this answer sheet.

Part A

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

Part A Score ☐

Part B–1

31	36 .....
32	37 .....
33	38 .....
34	39 .....
35	40 .....

Part B–1 Score ☐

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

LIVING ENVIRONMENT

Tear Here

Tear Here

LIVING ENVIRONMENT