Name_____ Date_____

PRACTICE TEST 1

1 A scientist notices that a local population of frogs has started to develop deformities. He designs an experiment to identify the source of the deformities, using unhatched frog eggs and a variety of environmental stimuli. Which of the following would be the dependent variable in this experiment?

A. the introduction of pesticides to the frog eggs

B. the number of frog eggs used in the study's sample

C. the development of deformities in the hatched frogs

D. the size of the aquariums in which the frog eggs were kept

2 A scientist wants to draw conclusions about all mammals based on the results of a study in which she compares the anatomies of house cats, leopards, seals, goats, and frogs. Her peers suggest that data from other studies might better support her conclusions. Why might this experiment be a poor choice for finding data that support her conclusions?

F. The study does not include mammals, so she cannot use the data to draw conclusions about mammals.

G. The study includes only mammals, so she cannot use the data to make conclusions about invertebrates.

H. The study includes only vertebrates, so she cannot use the data to draw conclusions about invertebrate mammals.

I. The study includes only a few mammals, so she cannot use the data to safely draw conclusions about all mammals.

3 Most scientists have biases, but they try to prevent bias from influencing their work. What is bias?

A. having a point of view that is objective

B. having a point of view that is impartial

C. having a point of view that lacks prejudice

D. having a point of view that can influence an experiment

Name_____ Date_____

4 Water movement into and out of cells is of prime importance to all living things. A single-celled organism has star-shaped organelles called contractile vacuoles to move water from inside to outside the cell. The data presented in the table below were obtained in an experiment in which the organism was placed in water with different salt concentrations.

Salt concentration	Rate of contractile vacuole contractions per minute
Very high	2
High	8
Medium	15
Low	22
Very low	30

The rate at which the contractile vacuole contracted to pump out excess water was recorded. How could you explain the observed relationship between the rate of contractile vacuole concentration and the salt concentration?

F. When the salt concentration outside the cell is very high, diffusion causes water to move inside the cell, and the contractile vacuole has to contract more rapidly.

G. When the salt concentration outside the cell is very low, diffusion causes water to move outside the cell, and the contractile vacuole has to contract more rapidly.

H. When the salt concentration outside the cell is very high, diffusion causes water to move outside the cell, and the contractile vacuole does not need to contract as rapidly.

I. When the salt concentration outside the cell is very low, diffusion causes water to move outside the cell, and the contractile vacuole does not need to contract as rapidly.

5 The diagram below shows a newspaper headline.

What is this headline an example of?

A. a fact

B. a prediction

C. a hypothesis

D. an observation

Name_____ Date_____

6 The table below contains data that are part of a scientific investigation.

Age group in years	Average height in centimeters	
	Female	Male
At birth	50	51
2	87	88
4	103	104
6	117	118
8	128	128
10	139	139
12	152	149
14	160	162
16	163	172
18	163	174

Which of the following is **not** a testable hypothesis that this data could be used to support or disprove?

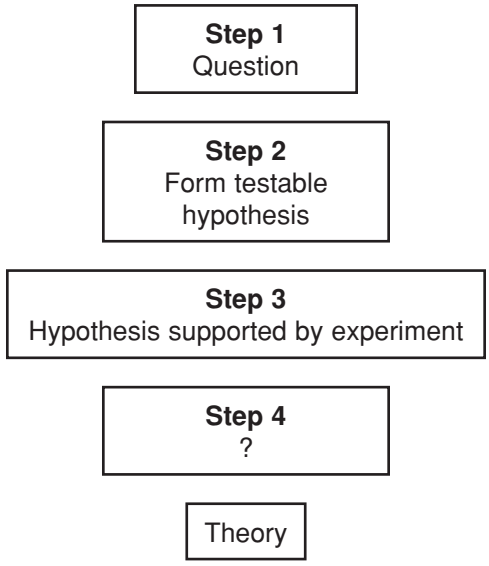
F. Height is affected by childhood nutrition.

G. All females are taller than males at age 12.

H. Being taller is always better than being shorter.

I. All men who are married are taller than their wives.

7 A scientific theory is not just good guesswork. There are several steps involved in developing a theory, and these steps could take many years before a hypothesis becomes accepted as a scientific theory.



In the diagram, what process happens at Step 4?

A. A team of scientists must form a committee to discuss the hypothesis.

B. The results of the experiment must be published along with a ballot so that other scientists can vote on whether they support or reject the hypothesis.

C. The scientist or team of scientists who formulated the hypothesis must do the supporting experiment over and over again to be sure they have it right.

D. The results of the experiment must be published so that the experiment can be repeated by other scientists, along with additional experiments to prove or disprove the hypothesis.

Name_____ Date_____

8 The cumulative work of many scientists can often be summarized as theories or laws. How is a theory different from a law?

F. A theory is a preliminary scientific explanation that can become a law only when it gains enough support and matches many observed phenomena.

G. A law is a preliminary scientific explanation that can become a theory only when it gains enough support and matches many observed phenomena.

H. A theory is a well-supported scientific explanation that makes useful predictions about phenomena, while a law is a well-supported description of observed phenomena.

I. A theory is an educated guess that can be tested through scientific observation and experimentation, while a law is a well-supported scientific explanation that makes useful predictions about phenomena.

9 The cell theory states that all cells arise from existing cells. Which scientist first determined this part of the cell theory?

A. Hooke

B. Schleiden

C. Schwann

D. Virchow

10 Many organelles in a cell are bound by membranes. Which organelles consist of membranous tubes and sacs and serve as part of the cell's packaging and transport system?

F. mitochondria and lysosomes

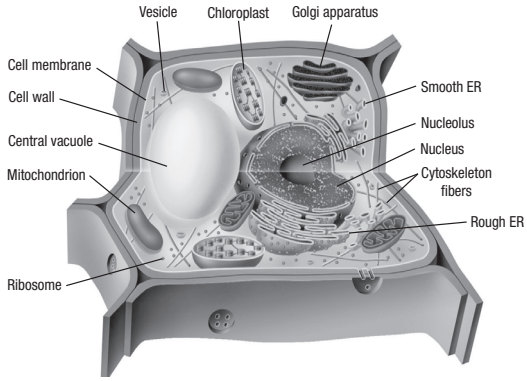
G. mitochondria and chloroplasts

H. ribosomes and endoplasmic reticulum

I. Golgi apparatus and endoplasmic reticulum

Name_____ Date_____

11 The diagram below shows a cell.



What type of organism might contain this type of cell?

A. animal

B. bacterium

C. plant

D. prokaryote

12 Which of the following instruments is best used to create a three-dimensional image of a cell's organelle?

F. a computer's digital camera

G. a compound light microscope

H. a scanning electron microscope

I. a transmission electron microscope

13 European sailors during the age of exploration in the 1500s and 1600s often spent long months at sea with little to eat other than hard biscuits and dried meat. They often developed a disease called scurvy, characterized by bleeding gums and loose teeth. What was the cause of this condition?

A. dehydration

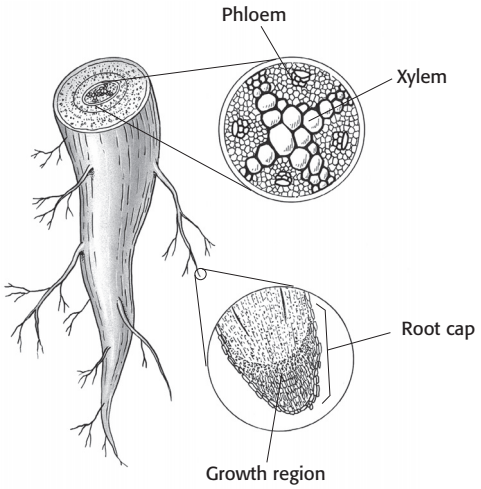
B. poor digestion

C. lack of protein in the diet

D. lack of vitamin C found in fruit

Name_____ Date_____

14 The illustration below shows a plant's root system.



Based on the illustration, which of the following statements is true?

F. Roots grow from their tips.

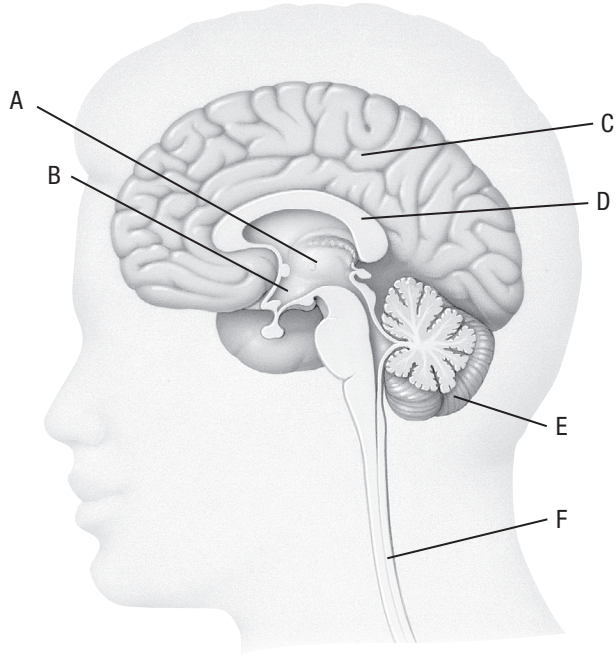
G. Xylem forms a protective layer over the root cap.

H. Roots contain xylem tissue but not phloem tissue.

I. Most plants have only one growth region in their root system.

Name_____ Date_____

15 The diagram below shows the major parts of the human brain.

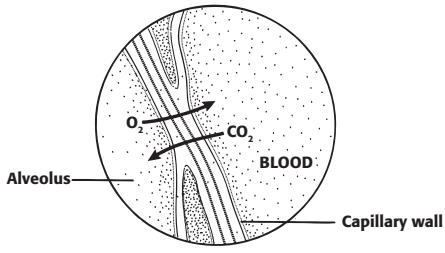


Which part of the brain receives sensory information from all parts of the body and relays the information to appropriate areas of the cerebral cortex?

A. part A **B.** part B

C. part D **D.** part E

16 The picture below shows the exchange of oxygen and carbon dioxide through a capillary wall.



This picture shows the exchange of gases between which two body systems?

F. circulatory and digestive

G. circulatory and respiratory

H. endocrine and circulatory

I. respiratory and endocrine

Name_____ Date_____

17 The inflammatory response is one of the immune system's nonspecific responses to infection. How does the inflammatory response act as a defense against infection?

A. The high body temperature kills the disease-causing bacteria.

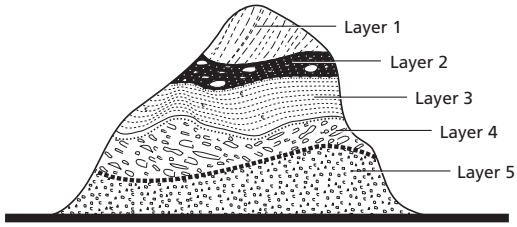
B. Oil and sweat on the surface of the skin inhibit bacterial growth.

C. Body heat destroys cellular proteins needed by the invaders to reproduce.

D. Release of histamine increases blood flow, which brings white blood cells.

18 While cutting through the side of a mountain to build a highway, workers expose several layers of rock, as shown in the figure below. Fossils of whale bones, shark teeth, and sand dollars are found in the rocks that form Layer 4. Fossils of rodents, toads, birds, and lizards are found in Layer 2.

ROCK LAYERS



The observations above support which of the following conclusions?

F. When Layer 4 formed, the mountain was near a large lake.

G. When Layer 4 formed, whales, sharks, and sand dollars lived in the mountains.

H. When Layer 4 formed, an ocean covered the area where the fossils were found.

I. When Layer 4 formed, whales, sharks, lizards, toads, and rodents were in the same food web.

Name_____ Date_____

19 In a classroom experiment, high school students conducted a survey to determine the similarities and differences among groups of invertebrates. They recorded their observations in Figure 1. They also made a chart of phyla in the animal kingdom showing evolutionary milestones (Figure 2). They wanted to know where each invertebrate specimen they examined would fit on a phylogenetic tree, with Chordata being the most evolved and Porifera being the least evolved.

Animal	Phylum	Symmetry	Internal body plan	Other observations
Sponge	Porifera	Asymmetrical	Full of holes	
Hydra	Cnidaria	Radial	Tissues & Stinging cells	
Planarian	Platyhelminthes	Bilateral	Acoelomate	Gut has one opening
Roundworm	Nematoda	Bilateral	Pseudocoelomate	Threadlike
Earthworm	Annelida	Bilateral	Coelomate	Segmented
Snail	Mollusca	Bilateral	Coelomate	Muscular foot
Beetle	Arthropoda	Bilateral	Coelomate	Paired legs
Starfish	Echinodermata	Bilateral	Coelomate	Five arms with tube feet

Phylum	Evolutionary milestone
Chordata	Notocord
Echinodermata	Deuterosomes
Arthropoda	Jointed appendages
Annelida	Segmentation
Mollusca	Coelom
Nematoda	Pseudocoelom
Platyhelminthes	Bilateral symmetry
Cnidaria	Tissues
Porifera	Multicellularity

Examine the phyla in the chart of evolutionary milestones. Which two of the animals studied would be **most closely related,** according to the evolutionary hypothesis represented by a phylogenetic tree?

A. the earthworm and the planarian

B. the earthworm and the beetle

C. the sponge and the snail

D. the starfish and the hydra

20 Early biologists thought that sponges were plants. What evidence supports this classification?

F. Sponges have specialized cells.

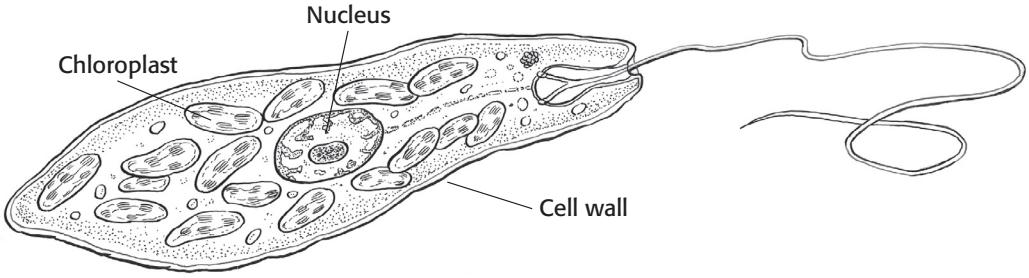
G. Sponges prey on small animals.

H. Sponges carry out photosynthesis.

I. Sponges move very slowly if they move at all.

Name_____ Date_____

21 The single-celled organism shown below uses a whip-like flagellum to move. The organism has a nucleus and organelles surrounded by a membrane. The organism also has chloroplasts and a cell wall.



To which kingdom does the organism belong?

A. Animalia **B.** Bacteria

C. Eubacteria **D.** Protista

22 Miller and Urey subjected hydrogen gas, water vapor, ammonia, and methane gases to sparks in a reacting chamber. What was produced, giving support to the primordial soup model of the origin of life?

F. primitive plants **G.** organic compounds

H. single-celled organisms **I.** membrane-bound organelles

23 In what genus are humans classified?

A. *sapiens* **B.** *Homo*

C. *Canis* **D.** *Animalia*

24 Banyan trees are found in places such as Florida, Hawaii, and India. The unique characteristic of this tree is that roots grow down from its branches into the ground. The tree can appear to have several trunks. What advantage does the banyan tree have over other trees?

F. The roots make the tree more stable in high winds.

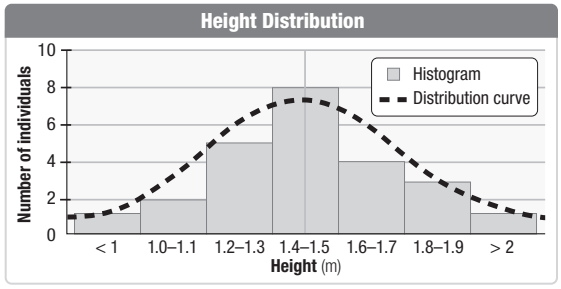
G. Above-ground roots are more protected from the Sun.

H. The roots provide shelter for ground-dwelling animals.

I. Above-ground roots may dry out and die during droughts.

Name_____ Date_____

25 A biology student measured the height of every student in her class and developed the histogram shown below. She then used a statistics software program to fit a curve through her data.



A group of exchange students visited the school for a semester. The average height of these students was 1.7 m. This changed the histogram of height in the class. What type of force on the class gene pool does this event represent?

A. genetic drift

B. immigration

C. mutation

D. natural selection

26 Genetic variation can increase the pace of evolution. Which would **most likely** increase genetic variation in a population?

F. cloning

G. twinning

H. crossing-over

I. asexual reproduction

27 In humans, having freckles (*F*) is dominant to not having freckles (*f*). Having a cleft chin (*C*) is also dominant to not having a cleft chin (*c*). Which statement is true of the offspring of a cross between parents that are both heterozygous for both traits (*FfCc*)?

A. Any offspring with freckles must also have a cleft chin.

C. All of the offspring will be heterozygous for both traits.

B. Any offspring who does not have freckles must have a cleft chin.

D. The offspring could exhibit both traits, neither trait, or only one of the traits.

Name_____ Date_____

28 The Punnett square below shows a cross between two rabbits. Black fur (*B*) is dominant to brown fur (*b*).

Bb* × *Bb

	B	***b***
B	1	2
b	3	4

If individuals from box 1 and box 4 were crossed, what would be the genotypes of the offspring?

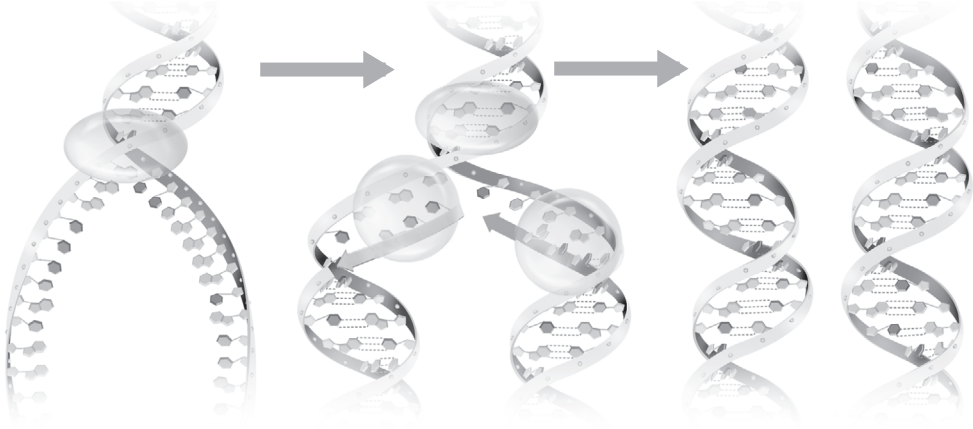
F. all *Bb*

G. *Bb* and *bb*

H. *BB* and *bb*

I. *BB* and *Bb*

29 The illustration below shows a cellular process.



Which of the following is shown in this illustration?

A. transcription

B. gene expression

C. DNA translation

D. DNA replication

Name_____ Date_____

30 The sequence of bases in a nucleotide of DNA makes up an organism's genetic code. How could a change in a sequence of DNA bases affect an organism?

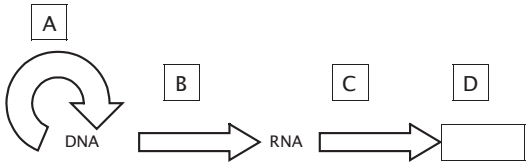
F. DNA could change into RNA.

G. The function of the resulting protein could change.

H. The DNA nucleotide could form an ATP nucleotide.

I. The gene could code for carbohydrates instead of proteins.

31 The diagram below shows the processes that occur during gene expression.



Which of the following is represented at letter *B*?

A. translation

B. replication

C. transcription

D. protein synthesis

32 Proteins control the cell cycle in healthy eukaryotes, causing cells to divide at a healthy rate. What disease is caused by uncontrolled, abnormal cell division?

F. cancer

G. heart disease

H. leprosy

I. tuberculosis

33 According to the genetic code, the mRNA codons UCU, UCC, UCA, and UCG all code for the amino acid serine. What does this fact tell you?

A. The genetic code is the same for nearly all organisms.

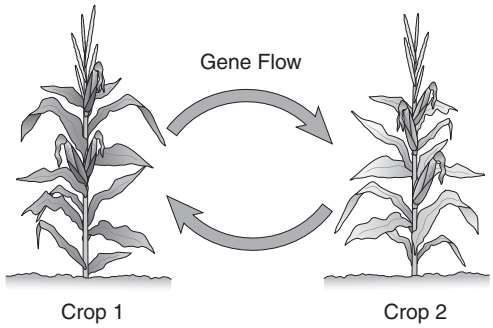
B. The genetic code does not dictate the amino acid sequence of proteins.

C. A mutation in one base will always have a physical effect on the resulting protein.

D. A mutation in one base could have absolutely no physical effect on the resulting protein.

Name_____ Date_____

34 The diagram below illustrates the concept of gene flow.



Which could be caused by gene flow from a crop plant engineered to be resistant to herbicides?

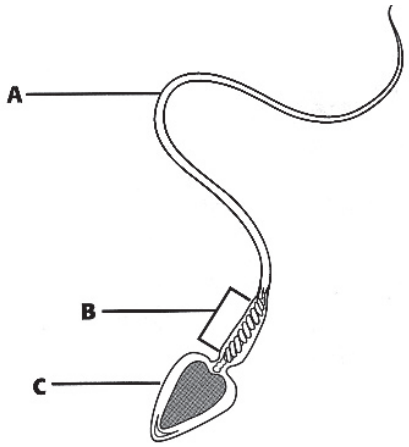
F. Drug-resistant bacteria may evolve.

G. New species of poisonous insects may evolve.

H. The genetically engineered plants may eventually loose their herbicide resistance as it wears off.

I. Genetically engineered plants may cause the evolution of weeds that are immune to weed-killing chemicals.

35 The diagram shows a sperm cell.



Which statement is true?

A. The sperm's nucleus is found in part *A*.

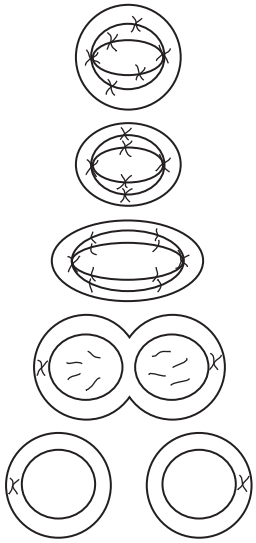
B. The sperm's nucleus is found in part *B*.

C. The sperm's nucleus is found in part *C*.

D. A sperm cell has no nucleus.

Name_____ Date_____

36 Octavio drew the diagram below to illustrate a process in cells.



What process is shown?

F. fertilization

G. meiosis

H. mitosis

I. osmosis

37 Meiosis is the form of cell division that produces gametes. Which of the following statements correctly describes gametes?

A. In spermatogenesis, eight sperm cells are produced.

B. Eggs are diploid and, when fertilized, give rise to haploid cells.

C. In the formation of eggs, four identical haploid cells are produced.

D. In oogenesis, the cytoplasm divides unequally, producing an ovum and three smaller polar bodies.

38 In asexual reproduction, a single parent passes copies of all of its genes to each of its offspring. When is asexual reproduction in plants advantageous?

F. when the environment is unstable

G. when there is little competition for resources

H. when plants are well adapted to the environment

I. when there are multiple disease agents in the environment

39 The populations of fish and amphibians in a lake more than 100 miles downwind from a coal-fired power plant suddenly began to decline. Biologists sampled the water in the lake and found that it had a pH of 2.4. What conclusions could the biologists draw from their finding?

A. Acid rain that had fallen on the lake had to have come from a pollution source close to the lake.

B. Pollutants from the power plant could be making the lake water too alkaline to support life.

C. The pH of the lake water was normal, so the decline in fish and amphibian populations had some other cause.

D. The lake water had become very acidic, which could be linked to emissions from the distant power plant.

Name_____ Date_____

40 Even a tiny amount of moisture can support the life of mosses, which are nonvascular plants. Why are mosses good pioneer species?

F. They grow very slowly.

G. They can survive in wet areas.

H. They can create a layer of soil on bare rock over time.

I. They can survive in areas that receive low levels of sunlight.

41 All populations fluctuate in size, influenced by abiotic and biotic factors. Which of the following is an abiotic factor that might reduce the size of a population?

A. climate change

B. increased predation

C. emergence of a new disease

D. decreased availability of a food source

42 Two species of finches are in competition for the limited resources of an ecosystem. One species eats fruit and the second species eats seeds. If a third species of herbivore finches moves into the area, how will the ecosystem change?

F. Resources will be more abundant.

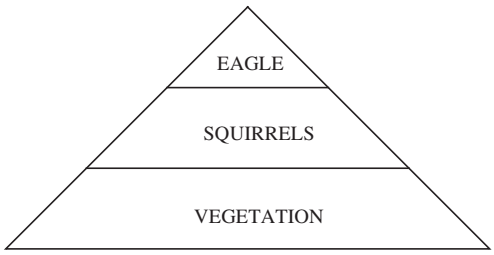
G. Water will become more available.

H. The climate of the ecosystem will change.

I. Fruit and seed resources will become less abundant.

Name_____ Date_____

43 The diagram below is an energy pyramid.



Which of the following is the correct flow of energy?

A. The eagle gets energy from eating plants.

B. The vegetation gets energy from the squirrels.

C. The squirrels get energy from eating the eagle.

D. The eagle gets energy from eating the squirrels.

44 A nonrenewable resource is a resource that forms at a rate that is much slower than the rate at which it is consumed. Which of the following resources is a nonrenewable resource?

F. coal

G. trees

H. wildlife

I. fresh water

45 Before implementing any one solution to an environmental problem, scientists first analyze collected data to predict the consequences of the different possible solutions. Why is it important to perform such a risk analysis before taking action?

A. It can prevent the environmental problem from ever occurring in any other unrelated area.

B. It can convince the public that there is no need to waste money on follow-up investigations.

C. It can help officials avoid or prepare for any negative effects associated with a plan of action.

D. It can solve the environmental problem without the need of public education or political action.

Name_____ Date_____

46 Carbon dioxide is released when people burn fuel. It is also used by plants during photosynthesis. Why is carbon dioxide then considered an air pollutant?

F. Too much carbon dioxide can lead to illness in humans.

G. Carbon dioxide can cause undesirable changes in climate.

H. Carbon dioxide is responsible for changes in the ozone layer.

I. Carbon dioxide can mix with other gases to cause air pollution.

47 Four categories of complex, highly organized molecular substances are needed for nearly all of the processes of organisms. Which of the following correctly identifies these four categories of complex, highly organized molecular substances?

A. lipids, proteins, water, nucleic acids

B. lipids, proteins, enzymes, nucleic acids

C. carbohydrates, lipids, proteins, nucleic acids

D. carbohydrates, enzymes, nucleotides, amino acids

48 One contribution to the buildup of greenhouse gases in the atmosphere is from humans' use of fossil fuels. Fossil fuels result from the gradual transformation of layers of organic matter in sediment into natural gas, coal, and petroleum. When fossil fuels are burned, they release a greenhouse gas that can be used by plants for photosynthesis. Thus, planting more trees can partly reduce the effect of burning fossil fuels. What greenhouse gas is released when fossil fuels are burned and also plays a major role in photosynthesis?

F. carbon dioxide

G. carbon monoxide

H. methane

I. oxygen

49 Hans Krebs, a German biochemist, was awarded a Nobel Prize in 1953 for the discovery of an important cycle. What does his cycle represent?

A. the last stage of photosynthesis

B. the first stage of aerobic respiration

C. the process of carbon dioxide fixation

D. the flow of hydrogen ions through the mitochondria

Name_____ Date_____

50 The chemical equations that sum up photosynthesis and cellular respiration have many of the same substances because these two processes are interrelated. Which two substances are the products of one of these processes and the reactants of the other process?

F. oxygen and water

G. glucose and water

H. carbon dioxide and water

I. carbon dioxide and glucose

51 Living things get the energy they need from carbohydrates such as glucose. What is the relationship between carbohydrates and ATP?

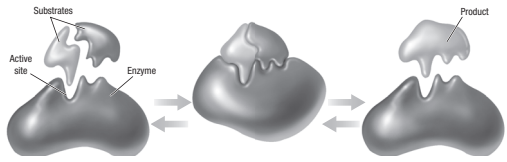
A. ATP is a type of carbohydrate.

B. ATP produces carbohydrates in the cell.

C. Cells use carbohydrates to produce ATP.

D. ATP and carbohydrates react to form proteins.

52 The diagram below shows how living things use enzymes in chemical reactions to release energy.



How do enzymes affect the reactions in which they take part?

F. Most enzymes slow down chemical reactions.

G. Enzymes are converted into products in the reaction.

H. Enzymes increase the activation energy of the reaction.

I. Enzymes decrease the activation energy of the reaction.

Name_____ Date_____

53 Water has both cohesive and adhesive forces that are relatively strong. That is, its molecules are strongly attracted to one another and to many other kinds of molecules. What kind of bond forms between two different water molecules?

A. compound bond

B. double bond

C. hydrogen bond

D. ionic bond

54 Javier notices that one of his house plants has drooping leaves. Which description explains what happens when he waters the plant?

F. The sudden movement of water by osmosis into the plant cells causes the cells to swell and burst.

G. The environment changes from hypotonic to hypertonic, the central vacuole swells, and the leaves stop drooping.

H. The environment changes from isotonic to hypertonic, mitochondria in the plant cells take up the additional water, and the leaves stop drooping.

I. The environment changes from isotonic to hypotonic, water moves into cells by osmosis, vesicles in the plant cells swell, and the leaves stop drooping.

55 There is a pair of identical twins in Tanisha's class. One of them was affected by a severe illness during his first few months of life. Although he survived, he is much shorter than his twin brother. How is this difference explained?

A. The genetic code of any individual uniquely determines all polygenic traits.

B. Height is a trait that can be influenced by both environmental and genetic factors.

C. The disease caused a mutation in the smaller twin's DNA, resulting in a smaller phenotype.

D. The twins' genotype is identical, so the smaller twin will have to end up the same size as his brother.

56 Which of the following would **most likely** remove carbon dioxide from the air?

F. Burning logs.

G. Planting trees.

H. Killing weeds.

I. Breeding livestock.

Name_____ Date_____

57 Male birds of paradise have extremely long, showy tail feathers. Which of the following statements **best** describes a selective advantage for having this trait?

A. The bird is easier for predators to spot.

B. The bird must eat more to produce extra-large feathers.

C. The bird flies slowly because of drag created by the feathers.

D. The bird attracts more females and therefore mates more frequently.

58 If a heterozygous individual (*Aa*) were crossed with another heterozygous individual (*Aa*), what is the chance that their offspring would have a heterozygous genotype?

F. 0%

G. 50%

H. 75%

I. 100%

59 The development of recombinant DNA technology was a major step forward in genetic science. Which of the following developments represents an advance in medicine that the application of genetic science allowed?

A. development of genetic counseling as a career

B. development of a method of DNA fingerprinting

C. production of proteins, such as insulin, for use as drugs

D. cloning of animals and engineering of agricultural crops

60 In 1998, forest fires swept through the forests of Yellowstone National Park. After the fires, biologists observed that new lodgepole pine seedlings began to sprout in the burned areas. The lodgepole pine cones are sealed with a resin that requires great heat to break open and release seeds. What testable hypothesis could you form from this observation?

F. Lodgepole pine seeds sprout easily.

G. Lodgepole pine is adapted to frequent forest fires.

H. Lodgepole pine will grow where other plants cannot.

I. Not all lodgepole pine seeds are contained in a cone.

Name_____ Date_____

61 Grasses, hawks, mice, and snakes are all organisms that live in a prairie. In the prairie food chain, which is the correct arrangement according to energy flow?

A. hawk → snake → mouse → grass

B. grass → snake → mouse → hawk

C. grass → mouse → snake → hawk

D. hawk → mouse → snake → grass

62 Sustainable agriculture is farming that conserves natural resources and helps keep the farmed land productive indefinitely. This kind of agriculture minimizes the amount of energy, water, pesticides, and fertilizer needed to grow crops. Sustainable agriculture involves planting productive, pest-resistant crops that require fewer resources and less maintenance. How do the resources needed for sustainable agriculture compare with the resources needed for large-scale agriculture?

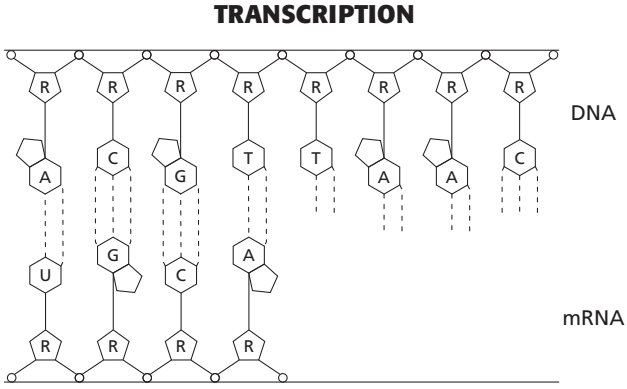
F. More resources are usually needed for the initial setup and planning of traditional large-scale agriculture techniques.

G. More resources are needed throughout the growing season for all crops grown with sustainable agriculture techniques.

H. Fewer resources are needed for the initial setup and planning of sustainable agriculture, and less water, energy, and other costs will be needed over time.

I. More resources may be needed for the initial setup and planning of sustainable agriculture, but less water, energy, and other costs will be needed over time.

63 The diagram below is a model of a cellular process called transcription.



What class of biological molecules is represented in the diagram above?

A. carbohydrates

B. nucleic acids

C. lipids

D. proteins

Name_____ Date_____

64 A sample of digestive juice was removed from the stomach of a pig. The juice was placed in a test tube, along with some grains of wheat. A second, identical test tube that contained an equal number of wheat grains was set up. However, pure water was used rather than digestive juice. The test tubes were kept at 40°C, which is about the temperature inside a pig's stomach. After eight hours, the grains of wheat in the digestive juice had broken apart into tiny particles. The grains of wheat in the water were wet but otherwise unchanged. Which of the following is a valid conclusion from this experiment?

F. Water does not play a role in the digestion of food in pigs.

G. Pigs can easily digest wheat but cannot digest other grains.

H. High temperatures increase the process of digestion in pigs.

I. Digestive juices help to break down food in a pig's stomach.

Name_____ Date_____

FCAT Practice Test 1

Answer Sheet for Practice Test 1

1 A B **C** D	14 **F** G H I	27 A B C **D**	40 F G **H** I	53 A B **C** D
2 F G H **I**	15 **A** B C D	28 **F** G H I	41 **A** B C D	54 F **G** H I
3 A B C **D**	16 F **G** H I	29 A B C **D**	42 F G H **I**	55 A **B** C D
4 F G **H** I	17 A B C **D**	30 F **G** H I	43 A B C **D**	56 F **G** H I
5 A B **C** D	18 F G **H** I	31 A B **C** D	44 **F** G H I	57 A B C **D**
6 F G **H** I	19 A B **C** D	32 **F** G H I	45 A B **C** D	58 F **G** H I
7 A B C **D**	20 F G **H** I	33 A B C **D**	46 F **G** H I	59 **A** B C D
8 F G **H** I	21 A B C **D**	34 F G H **I**	47 A B **C** D	60 F **G** H I
9 A B C **D**	22 F **G** H I	35 A B C **D**	48 **F** G H I	61 A B **C** D
10 F G H **I**	23 A B **C** D	36 F G **H** I	49 A **B** C D	62 F G H **I**
11 A B **C** D	24 **F** G H I	37 A B C **D**	50 F G **H** I	63 A **B** C D
12 F G **H** I	25 A **B** C D	38 F G **H** I	51 A B **C** D	64 F G H **I**
13 A B C **D**	26 F G **H** I	39 A B C **D**	52 F G H **I**	