

GRADE 7

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Earth  
& Life  
Science  
Practice  
Test

FCAT2.0

FCAT2.0

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Answer on a separate sheet of paper by writing the letter of your choice on your paper. When you reach the stop sign, you have finished this that session. You may go back and check your answer in that section of the test only.

SESSION 1: QUESTIONS 1-45

SESSION 2: QUESTIONS 41-90

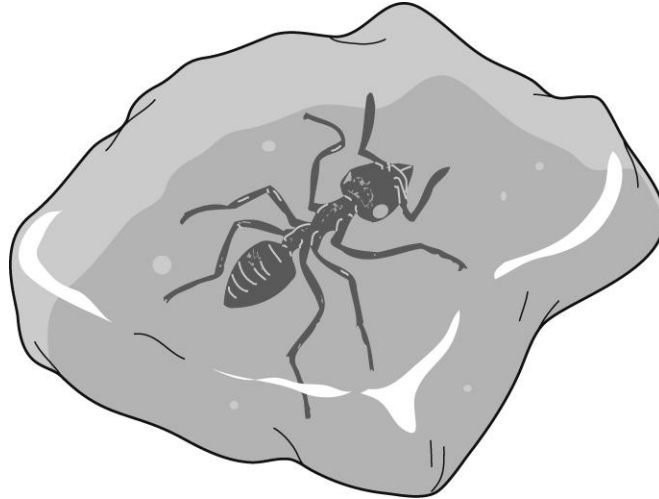
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***DO NOT WRITE ON THIS TEST***

## FCAT Practice Test 1

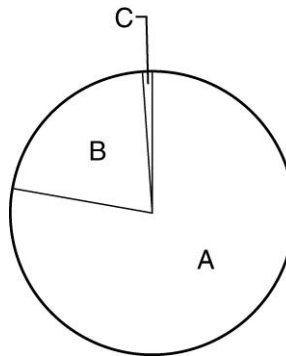
Choose the letter of the best answer.

- 1 The figure below shows how the best fossils of insects are formed.



How was the fossil of this insect formed?

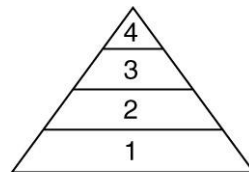
- A. by being petrified
  - B. by being trapped in asphalt
  - C. by being trapped in hardened tree sap
  - D. by being buried in sediment that slowly decays
- 2 Earth would be as lifeless as the moon without the atmosphere—a blanket of gases that surrounds the planet and extends about 700 km above its surface. Refer to the following circle graph.



The graph shows the relative abundance of gases in Earth's atmosphere. Which gas corresponds to label B in the figure?

- A. argon
- B. carbon dioxide
- C. nitrogen
- D. oxygen

- 3 Hakeem observes an organelle in a cell under a microscope. He notices that the organelle has a double membrane. Which of the following describes what Hakeem could have observed?
- A. He could have observed a cell wall or a vacuole.
  - B. He could have observed a chloroplast or a lysosome.
  - C. He could have observed a ribosome or a mitochondrion.
  - D. He could have observed a mitochondrion or a chloroplast.
- 4 During several trials, a group of scientists tests the reaction of a new medicine on a strain of bacteria. Which step is essential for proving the validity of the results?
- A. Make the process public so the results can be replicated.
  - B. Change the procedure to check whether the same results take place.
  - C. Have another scientist check to make sure the medicine was properly produced.
  - D. Have each group member use a different medicine and see what happens when they test it on the bacteria.
- 5 The diagram below shows an energy pyramid. In a marine ecosystem, algae carry out photosynthesis. Barracuda eat snapper fish. Reef sharks eat barracuda.

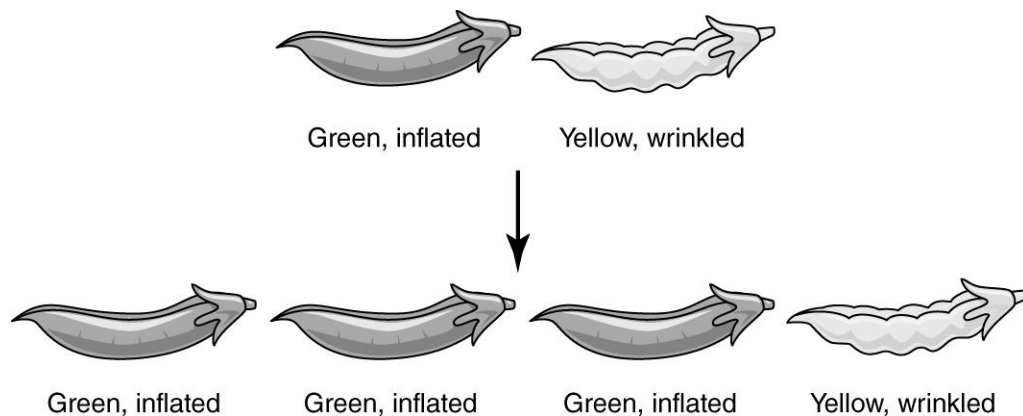


Energy Pyramid

Which organism would be at the top of the energy pyramid?

- A. algae
  - B. barracuda
  - C. reef shark
  - D. snapper fish
- 6 Pyroclastic flows are the most dangerous type of volcanic eruption. Extremely hot gases and fragments of rock travel at speeds over 100 km per hour. Which type of volcano is least likely to have a pyroclastic flow?
- A. lava
  - B. cinder cone
  - C. composite
  - D. shield

- 7 Sand Key is a barrier island located along the coast of Florida. Which process **most likely** caused Sand Key to form?
- sudden erosion of a sandbar
  - deposition of sand over time
  - wearing down of rocky cliffs
  - transfer of sand along a beach
- 8 Lee performed calculations that showed that the square of a planet's orbital period is proportional to the cube of the planet's mean distance from the sun. What did Lee's calculations demonstrate?
- Newton's law of universal gravitation
  - Kepler's first law of planetary motion
  - Kepler's second law of planetary motion
  - Kepler's third law of planetary motion
- 9 How does distance from the epicenter of an earthquake change its effects?
- The strongest effects are at the epicenter.
  - The strongest effects are felt in a line extending north and south from the epicenter.
  - The strongest effects are felt furthest from the epicenter.
  - The strongest effects are in a ring surrounding the epicenter with a radius of several miles.
- 10 In Mendel's experiments with pea plants, the pea plants had green or yellow pods and inflated or wrinkled pods. The figure below shows the result of crossing two pea plants with different pod colors and different pod shapes.



Which two traits are recessive?

- green pod color and inflated pod shape
  - green pod color and wrinkled pod shape
  - yellow pod color and inflated pod shape
  - yellow pod color and wrinkled pod shape
- 11 Carbohydrates are made up of three of the six major elements found in living things. Which elements combine to make a carbohydrate?

- A. copper, cobalt, and hydrogen
- B. chlorine, oxygen, and carbon
- C. carbon, helium, and oxygen
- D. carbon, hydrogen, and oxygen

12 Carefully read the following definition.

*Its biggest fault is the lack of carefully controlled and thoughtfully interpreted experiments.*

What is being defined?

- A. hypothesis
- B. pseudoscience
- C. natural science
- D. scientific method

13 Artificial satellites are constantly orbiting Earth. Which type of satellite provides information that is **most** helpful in preparing for natural disasters, such as hurricanes and tornadoes?

- A. navigation
- B. storm tracking
- C. global positioning
- D. television broadcasting

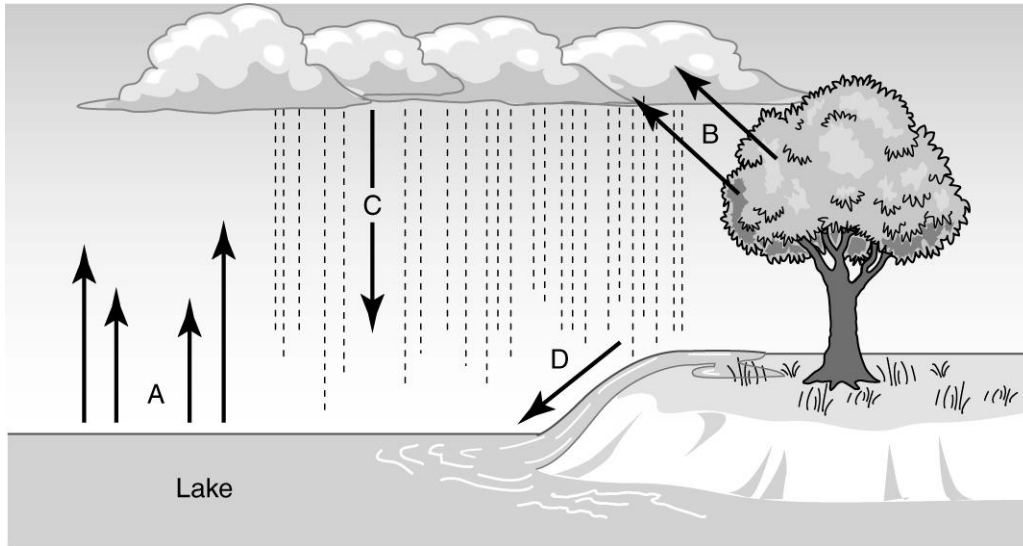
14 Felicia's teacher gives her the following list of types of organisms:

- 1. Ferns
- 2. Yeasts
- 3. Algae
- 4. Insects

Felicia needs to identify the kingdom for each type of organism. In what order could she list the kingdoms for organisms 1 through 4?

- A. Plantae, Fungi, Protista, Animalia
- B. Animalia, Protista, Plantae, Fungi
- C. Plantae, Protista, Fungi, Animalia
- D. Fungi, Plantae, Protista, Animalia

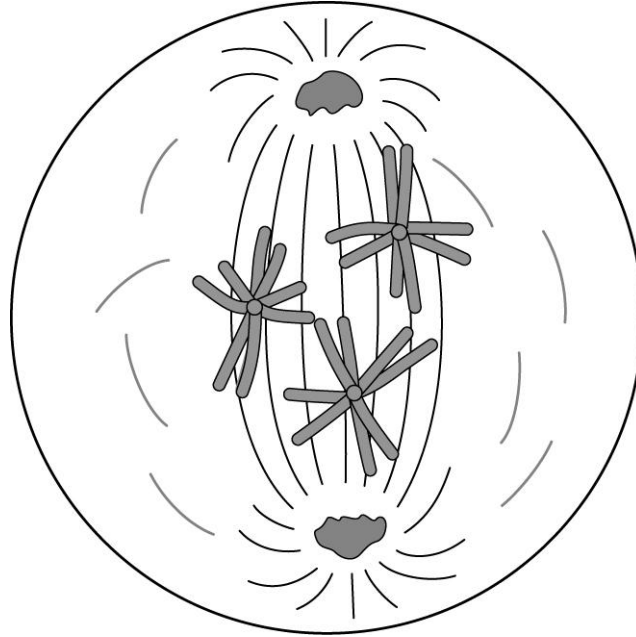
- 15 The following diagram shows the water cycle. The four different parts of the cycle are labeled A, B, C, and D.



Which part of the water cycle represents precipitation?

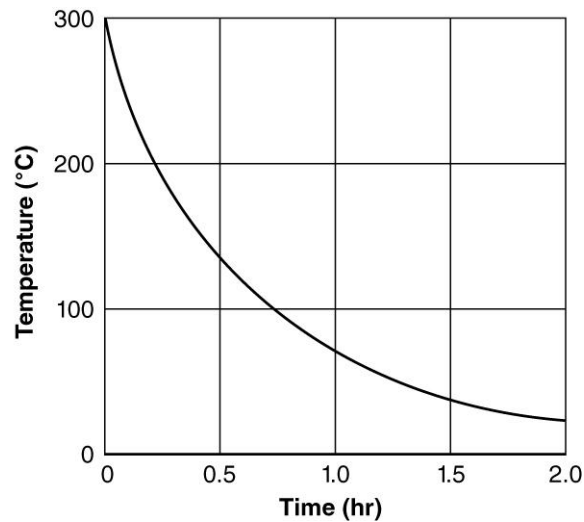
- A. A
  - B. B
  - C. C
  - D. D
- 16 How does sedimentary rock usually form?
- A. in large crystals
  - B. in vertical layers
  - C. in swirling bands
  - D. in horizontal layers
- 17 The planets in the solar system have a wide range of temperatures. Earth's temperatures range from about  $-89^{\circ}\text{C}$  to about  $58^{\circ}\text{C}$ . How do the temperatures on Neptune compare to Earth's temperatures?
- A. much hotter
  - B. much colder
  - C. slightly cooler
  - D. slightly warmer

- 18 During a poster project, Saffron draws the stages of the cell cycle and the phases of mitosis. She includes descriptions for each stage or phase on her poster. One of Saffron's drawings is shown below.



- Which caption should Saffron use for the figure above?
- A. The cell is not dividing, but it is carrying out normal life activities.
  - B. The chromosomes separate and move to opposite ends of the cell.
  - C. The cell is a product of cytokinesis and identical to the parent cell.
  - D. Chromosomes are duplicated and the nuclear membrane breaks down.
- 19 Which of the following species is most likely to become extinct?
- A. a species that is well adapted to its environment
  - B. a species that is losing its habitat due to deforestation
  - C. a species that has a great amount of genetic variation
  - D. a species that has a decreasing number of predators
- 20 How are photosynthesis and cellular respiration connected?
- A. They both require direct energy from sunlight.
  - B. They both provide sugars for cell processes.
  - C. Each process uses the same substances to make energy.
  - D. Each process depends on the products of the other process.
- 21 Which of these descriptions is an example of an unused body structure?
- A. a bat's wing that enables it to fly
  - B. the tiny leg bones found in snakes that have no legs
  - C. the front legs of a dog that supports its weight as it walks and runs
  - D. the tentacles of an octopus that aid it in movement and catching prey

- 22 Shakira hypothesizes that hot objects cool at constant rates. She experiments by heating a metal object with a Bunsen burner and then allowing it to cool to room temperature. She records her results in a graph.



Which choice describes the results of the experiment and tells what Shakira should do next?

- A. The result of the experiment is not conclusive. Shakira should repeat the experiment.
- B. The downward curve supports the hypothesis. Shakira should present her results to the class.
- C. The graph supports the hypothesis. Shakira should conduct several more trials to increase the accuracy of her data.
- D. The graph does not support the original hypothesis. Shakira should revise the hypothesis and design a new experiment.



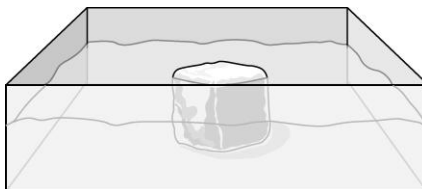
- 23 The table below compiles information about the distance of various stars from Earth, their apparent magnitude, and their absolute magnitude.

**Apparent Magnitude and Absolute Magnitude of Various Stars**

| Star       | Distance from Earth (ly) | Apparent Magnitude | Absolute Magnitude |
|------------|--------------------------|--------------------|--------------------|
| Sirius     | 8.6                      | -1.46              | 1.4                |
| Vega       | 25                       | 0.03               | 0.6                |
| Arcturus   | 34                       | -0.04              | -0.3               |
| Aldebaran  | 60                       | 0.85               | -0.3               |
| Rigel      | 1,400                    | 0.12               | -8.1               |
| Betelgeuse | 1,400                    | 0.50               | -7.2               |

Which star has the greatest luminosity?

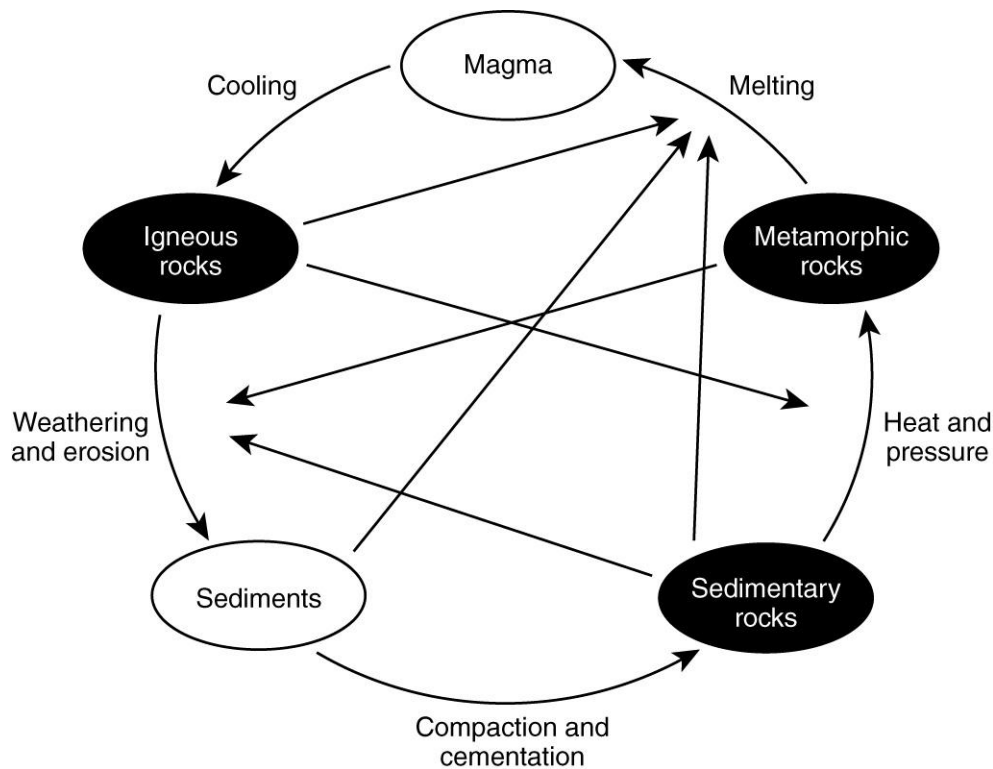
- A. Sirius
  - B. Rigel
  - C. Arcturus
  - D. Betelgeuse
- 24 Florida is the most sinkhole-susceptible state in the United States. Why is Florida so susceptible to sinkholes?
- A. Limestone exists at or near the ground surface in most areas of the state of Florida.
  - B. Florida's flat topography is vulnerable to the full force of winds and storm surges.
  - C. Much of Florida is located at or near sea level and can be easily covered by rising water.
  - D. In much of Florida, the lower layers of soil are made of organic material that can easily catch fire.
- 25 The following diagram shows water in contact with an ice cube and warmer air.



Which way will energy flow?

- A. from the air to the water
- B. from the water to the air
- C. from the ice cube to the air
- D. from the ice cube to the water

- 26 Many factors are used to determine the climate of an area. Which of the following is one of two **main** factors that determine climate?
- precipitation
  - humidity
  - air pressure
  - wind conditions
- 27 When looking at certain stars, astronomers observe no parallax. This parallax problem can be explained with different models. Which statement supports a geocentric model of the parallax problem?
- Earth is not moving, so no parallax exists.
  - The stars are too close for a visible parallax.
  - The stars are too far away for a visible parallax.
  - Observation points differ, so there is no visible parallax.
- 28 The rock cycle is a continuous process on Earth. Rock is always changing from one form to another. Some steps of the rock cycle are shown in the figure below.



What is a possible limitation of this model?

- It is too complex to use for studying the rock cycle.
- It does not show all the steps of the actual rock cycle.
- It is the wrong type of model, the rock cycle can only be shown with physical models.
- It cannot be used to examine the basic processes of the rock cycle.

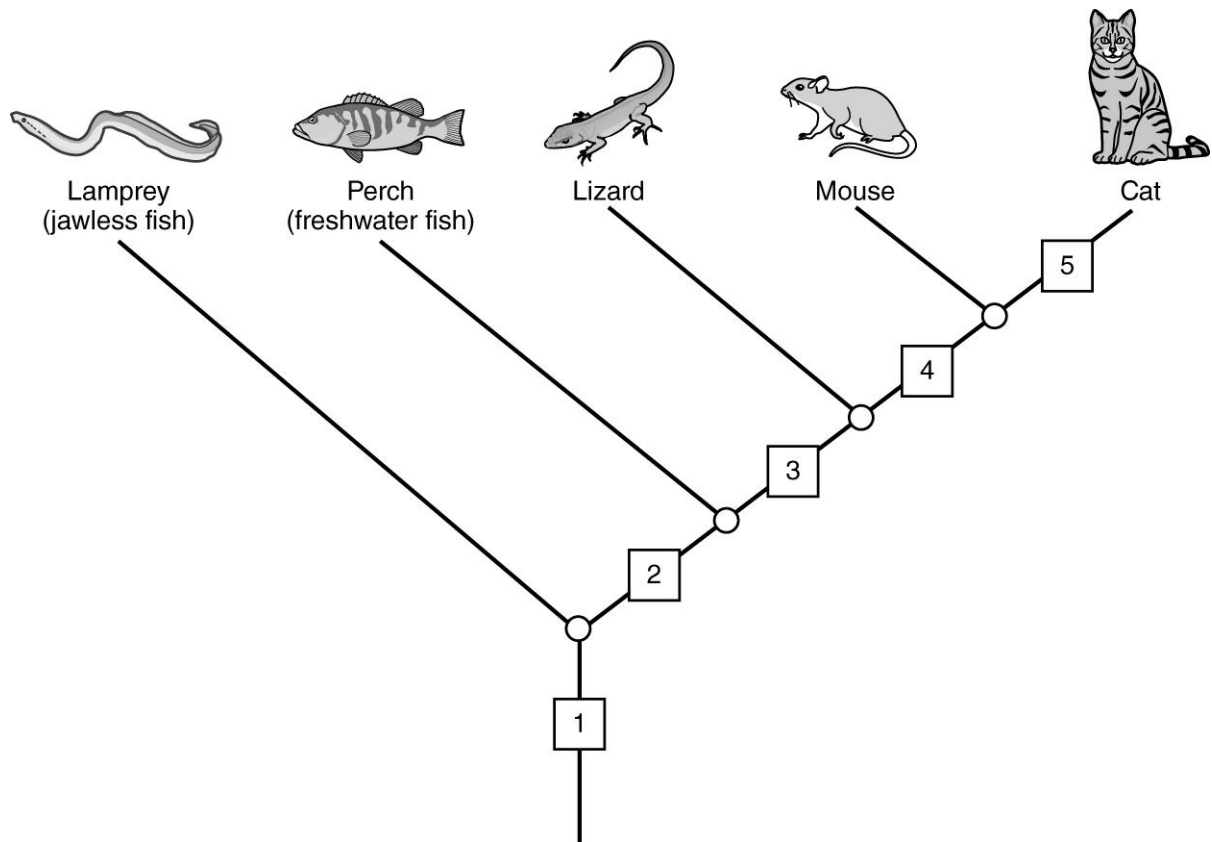
- 29 A spider hides in an orchid flower. It captures and eats insects as they enter the flower. In which case could this be an example of mutualism?
- A. if the spider is also eating part of the flower
  - B. if the spider's actions do not affect the orchid plant
  - C. if the insects that the spider captures are harming the flower
  - D. if the insects that the spider captures are pollinating the flower
- 30 Look at the diagram below.

|          |           |           |
|----------|-----------|-----------|
|          | <b>A</b>  | <b>a</b>  |
| <b>A</b> | ?         | <b>Aa</b> |
| <b>a</b> | <b>Aa</b> | <b>aa</b> |

Which of these choices should be placed in the box with the question mark?

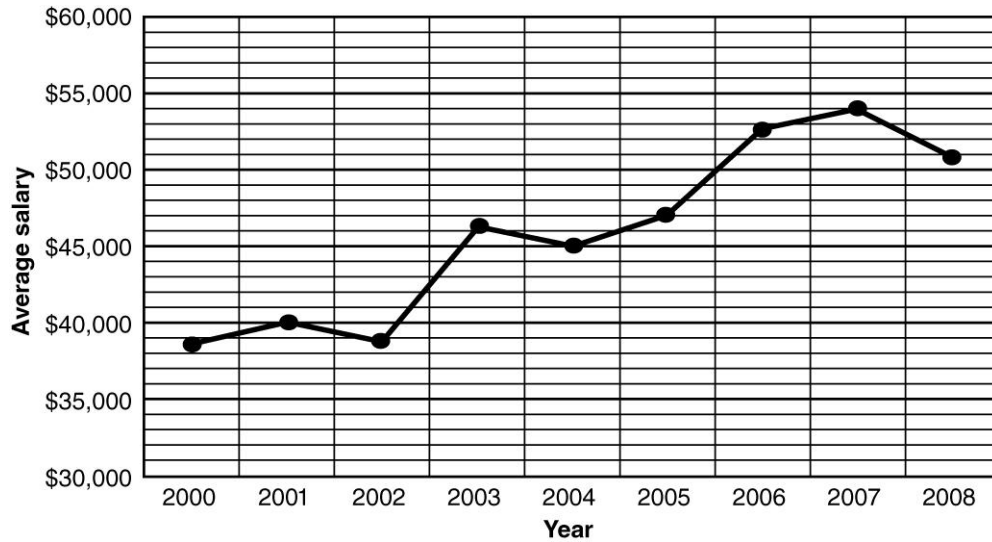
- A. *AA*
  - B. *Aa*
  - C. *aa*
  - D. *AA* or *aa*, but not possible to determine which one
- 31 What is the role of ATP in a cell?
- A. supplies energy for cellular activities
  - B. causes cellular respiration
  - C. digests cellular invaders
  - D. absorbs sunlight
- 32 Many wetlands are threatened by human development, such as when builders drain an area to construct new homes. How might draining a wetland affect native populations?
- A. Species that breathe air would become poisoned by the air pollution.
  - B. Species that carry out photosynthesis would have less access to sunlight.
  - C. Species that depend on moist conditions would have to compete for water.
  - D. Species that burrow would have fewer places to build underground homes.

- 33 A branching diagram is shown in the following figure.



- Based on the diagram, which of the following statements is **true**?
- A. Characteristics that would be listed at point 5 are found in mice, but not in the other organisms.
  - B. Characteristics that would be listed at point 1 are found in all of the organisms shown in the diagram.
  - C. Characteristics that would be listed at point 4 are found in lampreys, perch, and lizards, but not in mice or cats.
  - D. Characteristics that would be listed at point 2 are found in lampreys and perch, but not in the other organisms.
- 34 Vinay is not feeling well. He visits his doctor. The doctor gives Vinay a prescription for antibiotics. What do you conclude about the cause of Vinay's illness?
- A. The doctor thinks Vinay has a viral infection.
  - B. The doctor thinks a mutagen is the cause.
  - C. The doctor thinks Vinay has a bacterial infection.
  - D. The doctor thinks Vinay has an intestinal parasite.
- 35 There are many elements in the human body. Which makes up **most** of the human body, by mass?
- A. carbon
  - B. oxygen
  - C. potassium
  - D. sodium

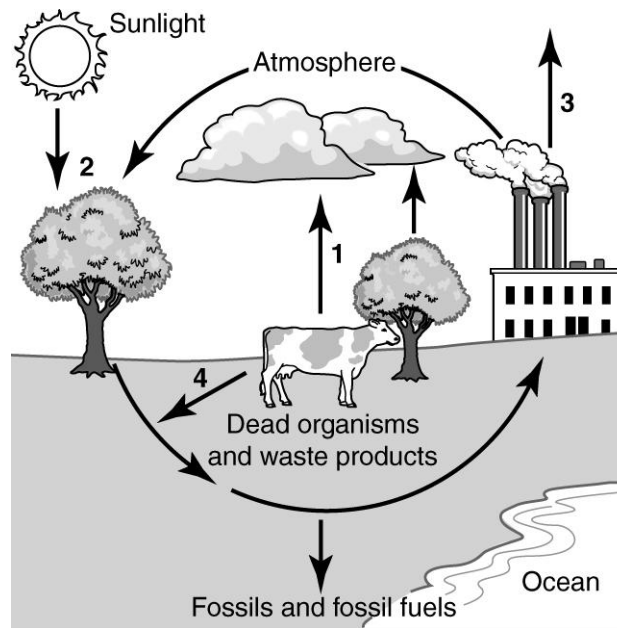
- 36 The line graph below shows the average annual salary at a company over a nine-year period.



From 2000 to 2008, how many times did the average annual salary **decrease**?

- A. once
  - B. twice
  - C. three times
  - D. four times
- 37 Jayden knows that multicellular organisms are more complex than unicellular organisms. Which of the following is a characteristic of multicellular organisms?
- A. obtaining food
  - B. being able to move
  - C. having organelles
  - D. having specialized cells
- 38 Changes within an area's climate may cause environmental changes, such as when a lush, grassy area becomes arid and desert-like. What will best help a species survive such changes?
- A. larger body size
  - B. smaller body size
  - C. less genetic variation
  - D. more genetic variation
- 39 One relationship between organisms is that of predator-prey. Which of the following is the best description of a predator?
- A. an organism that eats another organism
  - B. an organism that participates in symbiosis
  - C. an organism that is eaten by another organism
  - D. an organism that benefits at the expense of another organism

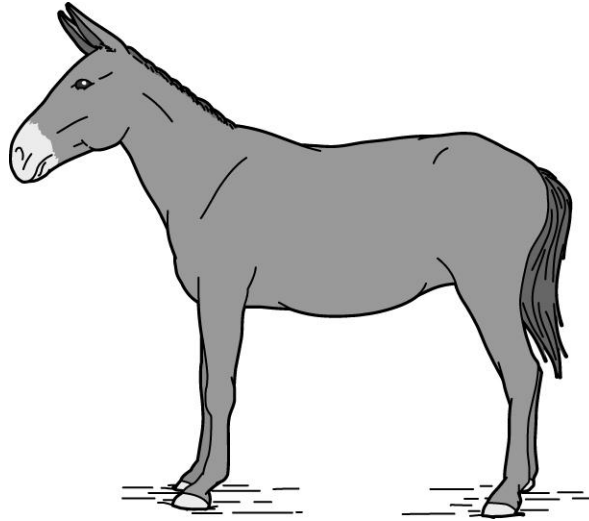
- 40 The diagram below shows part of the carbon cycle.



How do decomposers fit into the cycle shown?

- A. They help trees capture light energy from the sun for photosynthesis.
  - B. They store energy by breaking down dead organisms into fossil fuels.
  - C. They release energy that breaks down the organic molecules that trees produce.
  - D. They get energy and release carbon dioxide by breaking down the dead organisms.
- 41 Many disorders can affect the nervous system. These disorders can happen when parts of the nervous system are damaged by disease or injuries. They can result in problems with balance and movement and other symptoms. Which of the following disorders does **not** affect the nervous system?
- A. multiple sclerosis
  - B. spinal cord injuries
  - C. rheumatoid arthritis
  - D. Parkinson's disease
- 42 What is the food that plants produce during photosynthesis?
- A. carbon dioxide
  - B. chlorophyll
  - C. chloroplasts
  - D. glucose

- 43 The picture below shows a mule, which was created by breeding a male donkey and a female horse.



If a scientist wants to make a genetic duplicate of the mule, what process would he use?

- A. cloning
  - B. artificial selection
  - C. selective breeding
  - D. sexual reproduction
- 44 Leslie was reading an Internet article about ecosystems. The article included the table below, which classifies organisms according to their role in the flow of energy through the ecosystem. As Leslie read the table, she found an error in one of the entries.

| Organisms in Pine Flatwoods |                    |
|-----------------------------|--------------------|
| longleaf pine               | producer           |
| saw palmetto                | producer           |
| white-tailed deer           | primary consumer   |
| Florida panther             | top predator       |
| Everglades fox squirrel     | secondary consumer |

In which entry did Leslie find an error?

- A. longleaf pine
- B. white-tailed deer
- C. Florida panther
- D. Everglades fox squirrel

- 45 In the 1950s, a scientist conducted a study on the changes in a population of moths. Dead moths of the same species, but of two different color types were fastened to trees to study which color of moth was most likely to be eaten by birds. On dark trees, the light moths were eaten. On light trees, the dark moths were eaten. Other scientists criticized the investigation because birds' food choice using live moths should also have been studied. Which personal trait prompts scientists to question the validity of an investigation?
- A. creativity
  - B. determination
  - C. imagination
  - D. skepticism

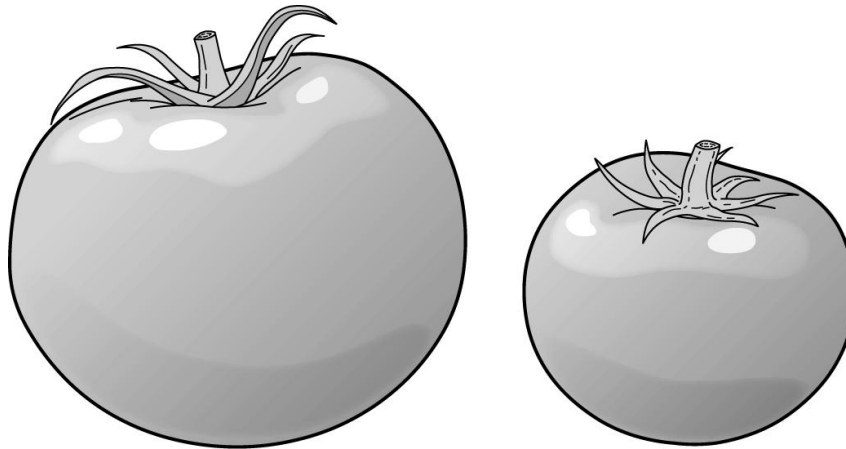




## FCAT Practice Test 2

**Choose the letter of the best answer.**

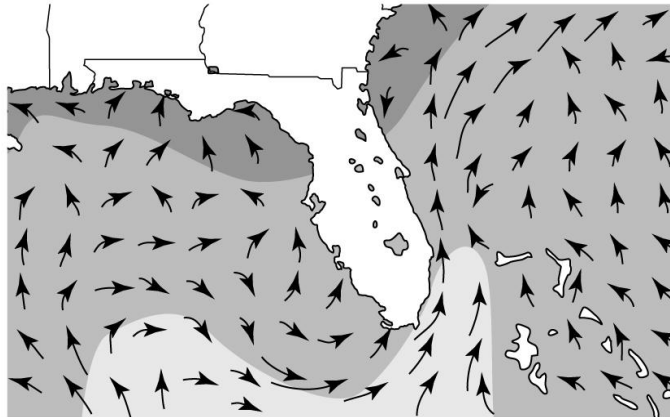
- 46 Laura is trying to identify a structure that she has found inside the cells she is studying. The structure looks like a system of flattened membranes. Laura discovers that lipids and proteins are transported to the structure, and the structure modifies and distributes them to other parts of the cell. What structure has Laura found?
- A. lysosome
  - B. ribosome
  - C. Golgi complex
  - D. central vacuole
- 47 What information is included in a food web?
- A. definitions of producer, consumer, and decomposer
  - B. the amount of food energy available in an ecosystem
  - C. the feeding relationships among organisms in an ecosystem
  - D. the number of different types of organisms in an ecosystem
- 48 Compare the tomatoes in the illustration below.



Which of these statements best explains how the tomato on the left was produced?

- A. It was cloned from the plant that produced the tomato on the right.
- B. It was produced by the process of artificial selection over many years.
- C. It grew on the upper part of a plant, and the tomato on the right grew on the lower part of the stem.
- D. It grew larger because the seeds from two tomatoes like the one on the right were used to grow a plant that produced larger tomatoes.

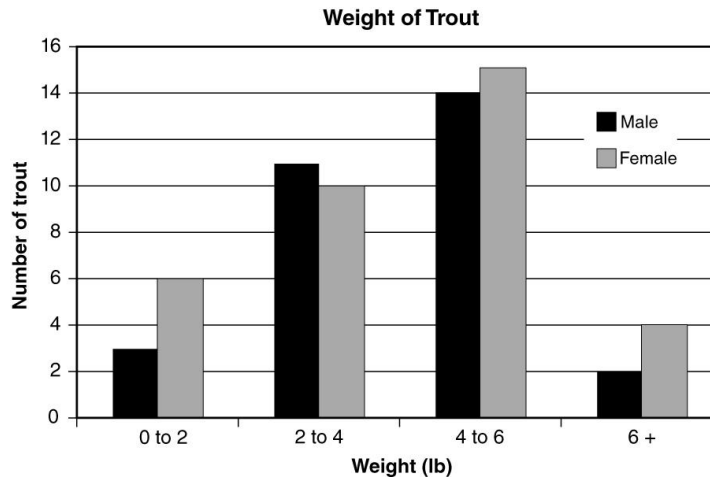
- 49 Nasir is a meteorologist. He is using an anemometer. What is Nasir studying?
- A. humidity
  - B. wind speed
  - C. temperature
  - D. air pressure
- 50 In convection, hot gases rise through cooler gases as they travel to the top of the convective zone. Once they reach the top of the convective zone, they cool. What happens to these gases next?
- A. They create sunspots.
  - B. They sink back down.
  - C. They give off energy in solar flares.
  - D. They begin the process of nuclear fusion.
- 51 The Florida Current was first reported by the Spanish explorer Ponce de Leon in 1513 when he discovered Florida. As seen in the following map, the Florida Current flows around the southern tip of Florida and up the East Coast.



How does the Florida Current **most likely** affect the climate of cities along the coast of southern Florida, such as Miami?

- A. It brings more wind, which makes the air less humid.
- B. It brings dry air, which contributes to hotter temperatures.
- C. It brings warm water, which makes the air temperature warmer.
- D. It brings cool water, which makes the air temperature cooler.

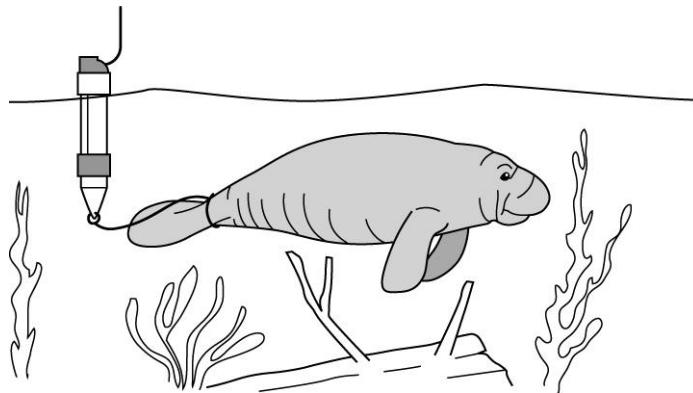
- 52 Scientists were studying the trout in a lake. They recorded the weight and sex of each trout and then released the trout. The graph below shows the results of the study.



Which question could the graph be used to answer?

- A. What was the weight of the heaviest trout?
  - B. How does weight change as a trout grows?
  - C. What was the most common weight range?
  - D. How many trout weighed exactly 5 lb?
- 53 In 2005, Hurricane Wilma caused an estimated \$17 billion in damage in southern Florida. A hurricane is a powerful, energetic storm. Where does a hurricane get its energy?
- A. from thunder
  - B. from electricity
  - C. from the clouds
  - D. from the evaporation and condensation of water
- 54 When trees die, they often fall on the ground and decompose. Which part of the Earth system includes dead and decomposed trees?
- A. biosphere
  - B. geosphere
  - C. atmosphere
  - D. hydrosphere
- 55 Amy's teacher has asked her to classify several different materials as minerals or nonminerals. Which is a characteristic of a mineral?
- A. burns very easily
  - B. has a crystalline structure
  - C. produced by living things
  - D. found only in laboratories

- 56 How do organisms get the energy they need?
- A. Plants get energy from fertilizers, and animals get energy by drinking water.
  - B. Plants get energy from glucose produced in the soil, and animals get energy directly from sunlight.
  - C. Plants do not require energy because they do not move, and animals get energy by performing exercise.
  - D. Plants break down the glucose they produced in photosynthesis, and animals get energy from eating other organisms.
- 57 Why is good personal hygiene important for limiting the spread of disease?
- A. Regular bathing makes it impossible for any bacteria to grow on the skin.
  - B. Keeping the body clean and taking antibiotics every day can prevent a person from ever getting sick.
  - C. Washing the skin removes all disease-causing bacteria and leaves beneficial bacteria in place.
  - D. Showering and brushing the teeth reduce the number of bacteria and other pathogens in and on the body.
- 58 This Florida manatee is wearing a radio tracking device that allows biologists to gather evidence on manatee migration. Some tracking devices include a global positioning system (GPS).



- What information would a global positioning system provide to the biologists about manatee migration?
- A. monitoring of the manatee's health
  - B. precise data on the manatee's location
  - C. updates on the manatee's food supplies
  - D. predictions of how far the manatee will travel
- 59 Alex is studying leg bone fossils of an extinct species to see if the extinct organism could be an ancestor of a certain living species. Which of the following types of evidence could he obtain from studying fossils?
- A. genetic evidence
  - B. embryological evidence
  - C. structural evidence
  - D. developmental evidence

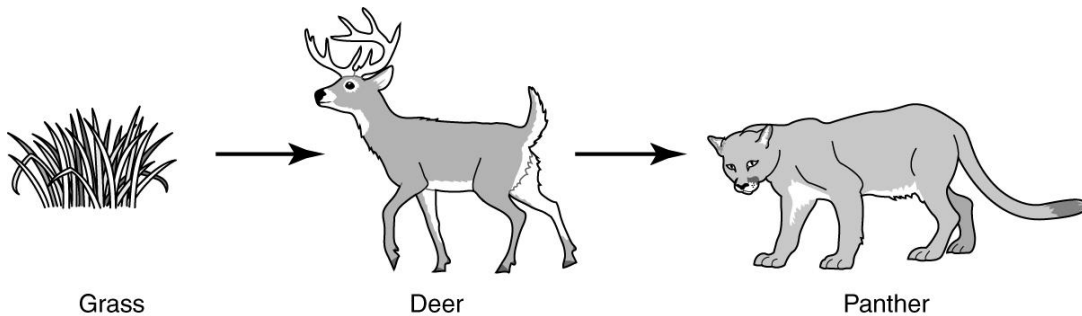
60 Felicia's teacher gives her the following list of types of organisms:

1. Ferns
2. Yeasts
3. Algae
4. Insects

Felicia needs to identify the kingdom for each type of organism. In what order could she list the kingdoms for organisms 1 through 4?

- A. Plantae, Fungi, Protista, Animalia
- B. Animalia, Protista, Plantae, Fungi
- C. Plantae, Protista, Fungi, Animalia
- D. Fungi, Plantae, Protista, Animalia

61 The diagram below shows a simple food chain.



Which statement supports the ecosystem represented by the food chain?

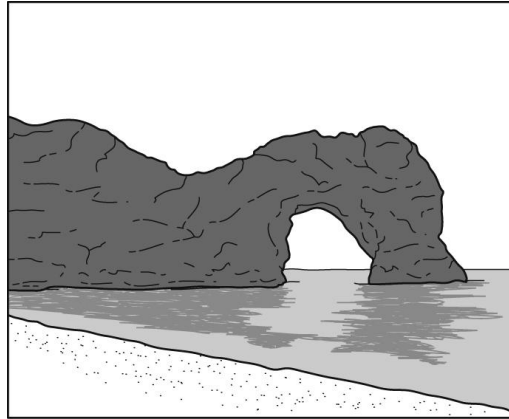
- A. It can support more panthers than deer.
- B. It can support more deer than panthers.
- C. It can support the same number of panthers as it can deer.
- D. The amount of grass does not affect the ecosystem.

62 In the United States, many children are given vaccines to prevent diseases. A vaccine causes the body to produce antibodies. For example, children who are given the polio vaccine will not contract polio because their bodies will make antibodies to destroy the polio virus. Which disease has been nearly eliminated in the United States because of vaccines?

- A. cancer
- B. measles
- C. influenza
- D. common cold

- 63 Where does the exchange of materials in and out of a cell take place?
- A. at the cell membrane
  - B. in the chloroplast
  - C. in the nucleus
  - D. in the chromosome
- 64 What is a difference between eukaryotic cells and prokaryotic cells?
- A. Only prokaryotic cells have cytoplasm.
  - B. Only eukaryotic cells have a cell membrane.
  - C. Only prokaryotic cells have genetic material.
  - D. Only eukaryotic cells have membrane-bound organelles.
- 65 According to the current theory regarding the extinction of the dinosaurs, the extinction was triggered by the effects of a large meteor that struck Mexico 65 million years ago. What is the **best** evidence of this theory?
- A. fossil remains of dinosaurs found in Mexico
  - B. magnetic mapping of rocks that reveals a buried crater in Mexico
  - C. a permanent change in world sea levels about 65 million years ago
  - D. rock studies that show the age of the rocks where the meteor struck
- 66 Ms. Salis explains to her class that sodium (Na) and chlorine (Cl) atoms bond to make table salt (NaCl). Which is the **best** description of table salt?
- A. It is an atom.
  - B. It is a cell.
  - C. It is an element.
  - D. It is a compound.
- 67 Cellular respiration allows cells to break down glucose to release energy, which is used for cell processes. Which substance do cells in the human body need to carry out cellular respiration?
- A. They need carbon dioxide.
  - B. They need chlorophyll.
  - C. They need oxygen.
  - D. They need water.

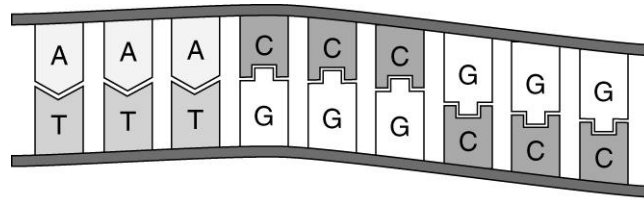
- 68 Wavelength, frequency, and energy are related. What happens to a wave as its wavelength gets shorter?
- A. Its frequency and energy increase.
  - B. Its frequency and energy decrease.
  - C. Its frequency increases, while its energy increases.
  - D. Its frequency decreases, while its energy decreases.
- 69 The universe consists of space and all the matter and energy in it. What do we call the parts of the universe that are located between galaxies?
- A. stars
  - B. voids
  - C. moons
  - D. planets
- 70 The figure below shows an example of a geologic change that supports the principle of uniformitarianism.



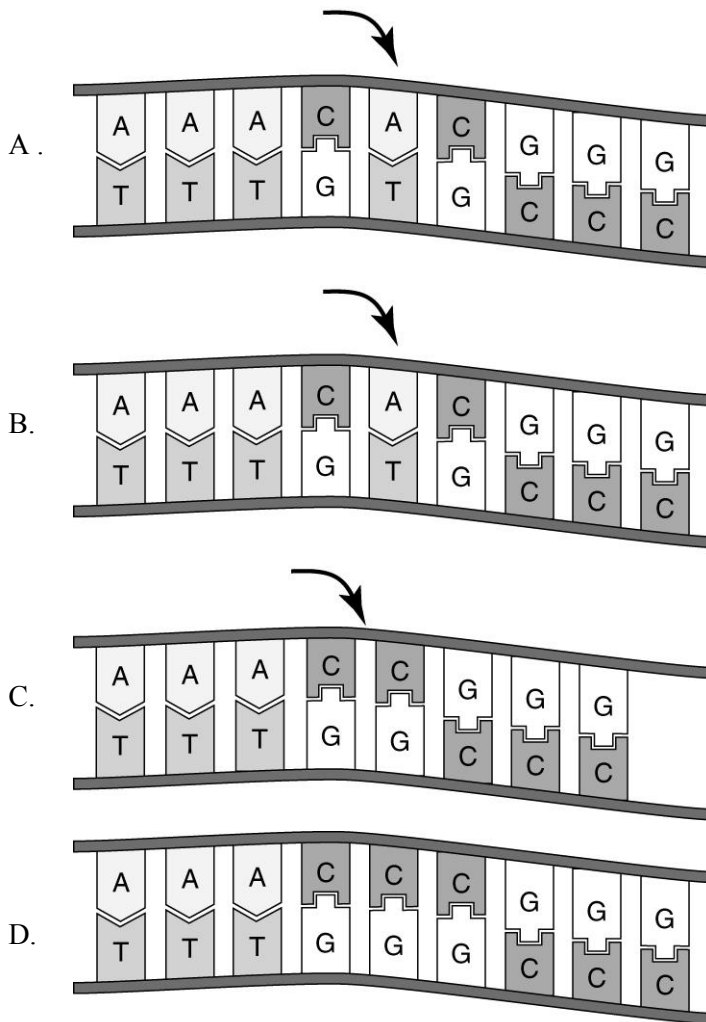
What geologic change is shown in the figure?

- A. abrasion
  - B. deposition
  - C. erosion
  - D. volcanism
- 71 Aisha is preparing a research report on isotopes. She knows that all atoms have isotopes, but only some isotopes are commonly used to date objects. Which of the following isotopes is commonly used to date objects?
- A. carbon-14
  - B. hydrogen-3
  - C. nitrogen-15
  - D. oxygen-18

72 The diagram below shows a sequence of DNA.



Which of the following diagrams shows the original DNA sequence with an insertion mutation?



73 Mistletoe is a plant that grows on other plants. Its root-like structure reaches into the plants and draws out water and nutrients. What is the mistletoe's role in this relationship?

- A. host
- B. prey
- C. parasite
- D. predator



74 Which of the following is a situation that could lead to extinction of a species?

- A. increased competition
- B. increased food supply
- C. increased habitat
- D. increased population size

75 Look at the diagram shown below.

|                 |                  |                  |
|-----------------|------------------|------------------|
|                 | <b><i>B</i></b>  | <b><i>B</i></b>  |
| <b><i>B</i></b> | <b><i>BB</i></b> | <b><i>BB</i></b> |
| <b><i>b</i></b> | <b><i>Bb</i></b> | <b><i>Bb</i></b> |

Which of these choices gives the correct ratio for the offspring predicted by the diagram?

- A. 2 *BB* : 1 *Bb*
- B. 1 *BB* : 1 *BB*
- C. 1 *BB* : 1 *Bb*
- D. 1 *BB* : 2 *Bb*

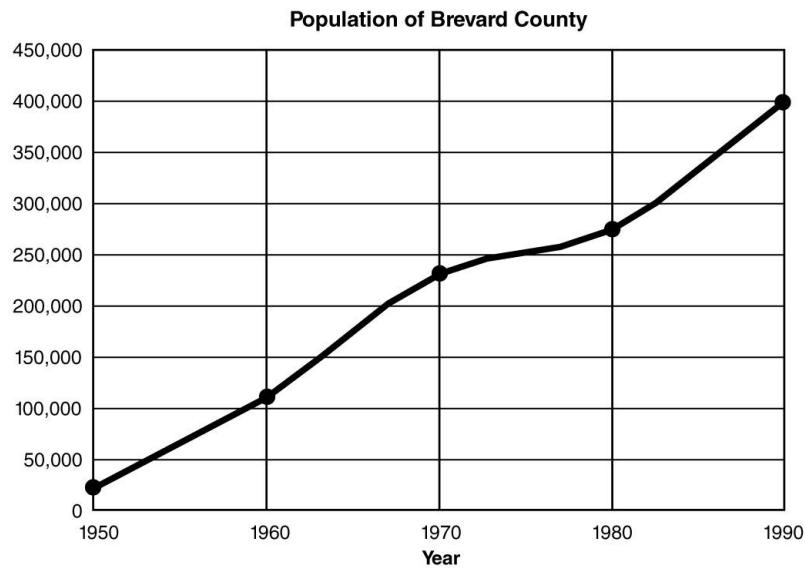
76 During a quiz bowl, Anish and his team used clues about organ structure to identify body systems. The moderator provided the following clues:

- This system includes organs that are long, hollow tubes of muscle.
- This system includes an organ that is a large muscular sac.

Which body system includes these organs?

- A. digestive
- B. endocrine
- C. integumentary
- D. nervous

- 77 If the pressure of molten material inside Earth becomes high enough, a crack can open in Earth's surface, and the molten material can flow out of the crack. What is this crack in Earth's surface called?
- A. caldera                      C. fissure  
B. crater                        D. lava plateau
- 78 Phillip wants to model the formation of a planet. What would his model for a planetesimal look like?
- A. a rotating cloud of gas and dust from which the sun and planets formed  
B. an elliptical path that a body follows as it travels around another body in space  
C. a disk of material surrounding a young star or protostar that may eventually form planets  
D. a small body from which a planet originated during the early development of the solar system
- 79 Aurora records the following observations: It rained on Monday. It was sunny on Tuesday. It rained again on Wednesday. What is Aurora recording?
- A. observations of the weather  
B. observations of the climate  
C. observations of both weather and climate  
D. observations of neither weather or climate
- 80 The graph below shows the population of Brevard County from 1950 to 1990.

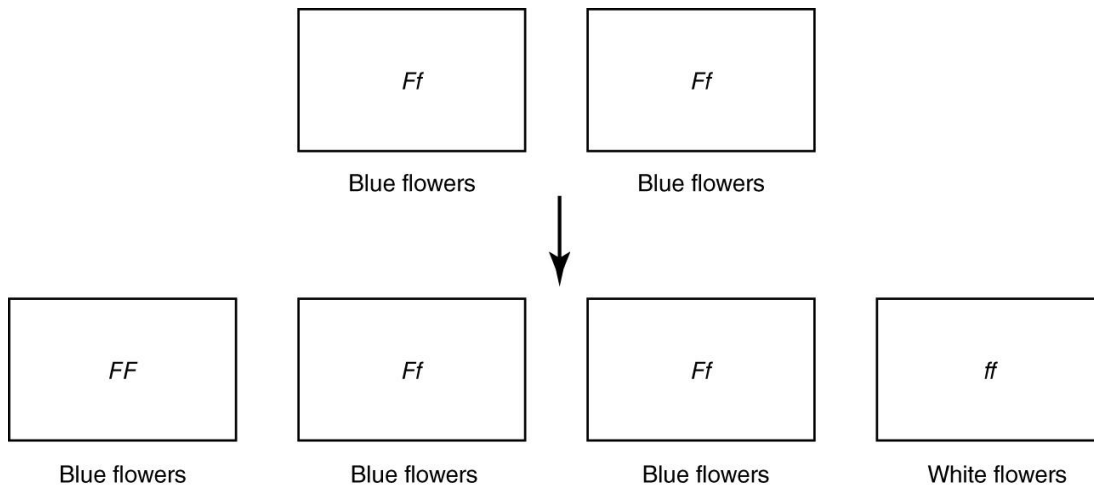


Sources: <http://www.nasa.gov/centers/kennedy/about/history/story/ch18.html>  
<http://www.census.gov/population/cencounts/fl190090.txt>

Over the last 50 years, NASA has encountered challenges such as decreased government funding for space programs. Based on the data in the graph, during which decade did NASA **most likely** face funding challenges?

- A. 1950 to 1960                      C. 1970 to 1980  
B. 1960 to 1970                      D. 1980 to 1990

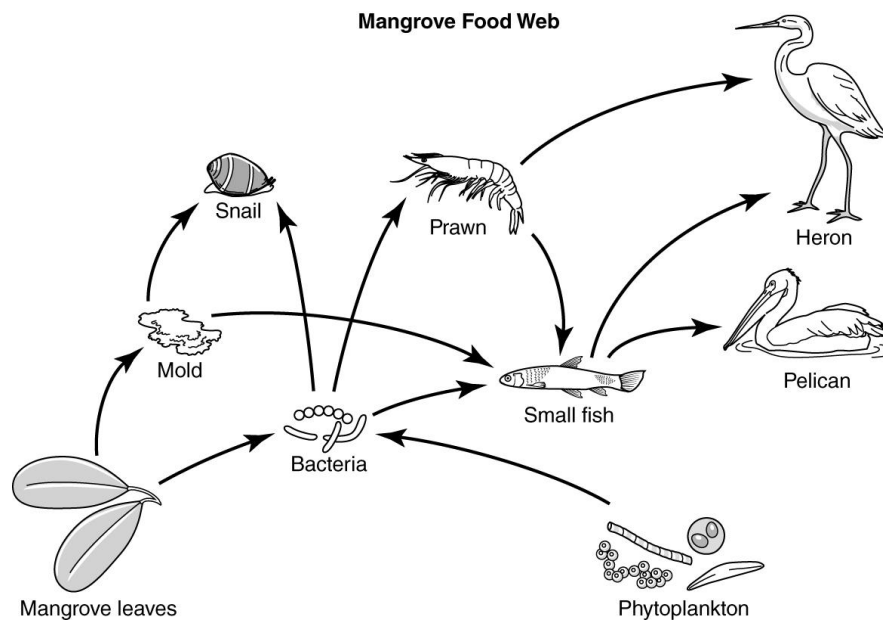
- 81 Every eukaryotic cell has a structure called a cell membrane. What is the function of the cell membrane?
- A. It fills the inside of the cell.
  - B. It holds the cell's DNA in place.
  - C. It stores the genetic information of the cell.
  - D. It holds the cell together and controls what goes in and out of the cell.
- 82 The diagram below represents a cross between two plants with blue flowers. The letters *F* and *f* are alleles for different traits.



Alleles are different forms of which genetic structure?

- A. DNA
  - B. cells
  - C. genes
  - D. chromosomes
- 83 More than 2,000 years ago, in about 400 BCE, Democritus proposed that all matter is made up of atoms. Scientists have revised the atomic theory many times since Democritus first used the word *atom*. Why has the atomic theory changed over time?
- A. Theories always change over time.
  - B. The feelings of scientists changed over time.
  - C. Other scientists interpreted Democritus' evidence differently.
  - D. After new, relevant evidence emerged, scientists reevaluated the theory.

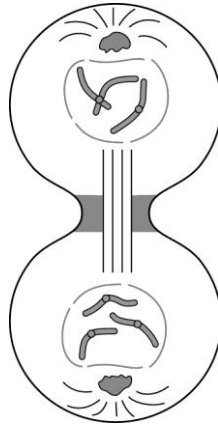
84 The food web below shows some of the relationships that exist in a mangrove swamp ecosystem.



According to the food web, which classification best describes the role of prawn in this ecosystem?

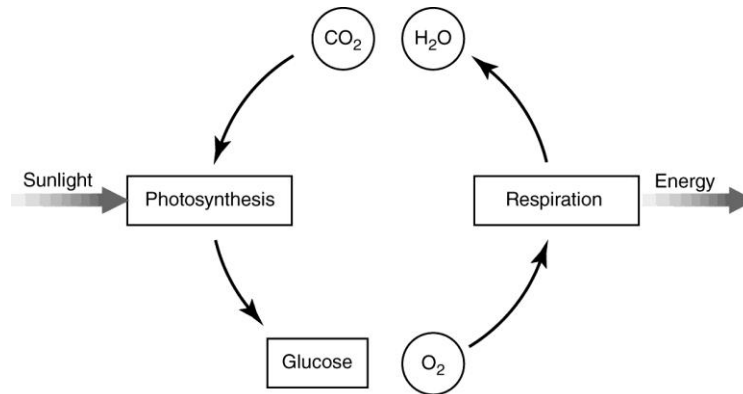
- A. carnivore
- B. herbivore
- C. omnivore
- D. scavenger

- 85 The teacher gives Abdi a series of figures to identify during a class activity. Each image shows a stage of the cell cycle. Abdi labeled the figure shown below as *Interphase*.



- Which of these statements **best** evaluates Abdi's answer?
- A. He was incorrect because the image shows anaphase.
  - B. He was incorrect because the image shows prometaphase.
  - C. He was incorrect because the image shows telophase.
  - D. He was incorrect because the image shows cytokinesis.
- 86 Joshua investigates the effect of varying amounts of sunlight on the rate of plant growth. He experiments by exposing seedlings to different amounts of sunlight each day. He stops the experiment when each seedling reaches 20 cm in height. Which variable does Joshua control in the experiment?
- A. rate of plant growth
  - B. amount of water per plant per day
  - C. amount of sunlight per plant per day
  - D. time needed to reach a height of 20 cm
- 87 Cypress trees are cone-bearing trees that can be found in the wetlands of the Florida Everglades. Cypress trees often have bumpy parts, called knees, that grow up from their roots above the soil and water level. Which limiting factor does a cypress knee likely provide for the tree in areas that are always flooded?
- A. air
  - B. soil
  - C. water
  - D. sunlight
- 88 Hawks have eyes that allow them to see prey from very far away. Which of the following terms best describes this trait?
- A. vestigial organ
  - B. adaptation
  - C. overproduction
  - D. artificial selection

89 The diagram below shows the relationship between respiration and photosynthesis.



How is combustion similar to cellular respiration?

- A. It needs glucose and oxygen to occur.
  - B. It can occur only in living cells.
  - C. It removes energy from the environment.
  - D. It increases the amount of carbon dioxide in the environment.
- 90 Paleontologists study fossils. A team of paleontologists published an article in a scientific journal announcing which dinosaur a set of fossil eggs came from. Which of these sources is a **poor** one for contributing to the knowledge represented in the article?
- A. research about the dinosaur that laid the eggs
  - B. media interview of a rival paleontologist about the work
  - C. part of a book on fossil eggs by a famous paleontologist
  - D. report from a professor of paleontology who reviewed the data

