

# Ohio Achievement Assessments—Practice Test 2

Use the information in the table below to answer question 1.

A student in Cleveland, Ohio recorded the 1 P.M. temperature and barometric pressure each day from June 15 to June 24. The information was recorded in the table below.

1 P.M. Cleveland Temperature and Barometric Pressure June 15–24

June	Temperature (°Fahrenheit)	Barometric Pressure (millibars)
15	85	1007
16	87	1012
17	84	1010
18	68	992
19	74	996
20	81	1001
21	83	1010
22	84	1009
23	87	1011
24	90	1017

1. What weather event caused the colder temperatures and lower barometric pressure on June 18?
- A. blizzard
  - B. cold front
  - C. warm front
  - D. maritime tropical air mass

2. What process is capable of changing ocean water into fresh water that is usable for human consumption?

- A. solar radiation
- B. water cycle
- C. plant transpiration
- D. human respiration

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Use the information below to answer questions 3 and 4.

## Practice Test 2

In 2009, the Republic of China constructed an enormous dam on the Yangtze River. Hydroelectric power plants at the Three Gorges Dam will produce as much energy as fifteen nuclear plants. It is hoped that the new power plants will reduce China's reliance on fossil fuels, which now produce most of China's electricity. However, building the dam has created a huge lake, flooding an area larger than the city of New York, and forcing more than one million people to leave their homes.



3. The Three Gorges Dam is using hydroelectric power to replace power plants that generate electricity using fossil fuels. Identify one type of fossil fuel that can be used to generate electricity. Describe one reason why using hydroelectric power is better for the environment than burning fossil fuels. (2 points)
4. You wish to persuade someone that hydroelectric plants are a better choice than power plants that burn fossil fuels because one of them uses a renewable energy source, while the other uses a nonrenewable energy source.

Which statement supports your position?

- A. Fossil fuels are renewable and easily replaced, while hydroelectric power is not renewable and takes millions of years to replace.

Use the diagram below to answer question 5.

The diagram shows a magnified view of an igneous rock.



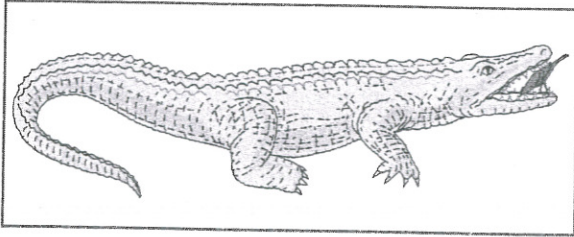
5. What is the composition of the igneous rock in the diagram above, and how did it form?
- A. a single mineral formed underwater
  - B. three minerals that formed underwater
  - C. three minerals cooled from a hot liquid
  - D. three minerals that formed from pressure underground

6. What series of rock cycle processes can cause a metamorphic rock to become an igneous rock?

- A. melting, cooling, and solidification
- B. melting, eroding, and compacting
- C. chemical changes due to heat or pressure
- D. melting, weathering, erosion, and settling in water

Use the information below to answer question 8.

8. The Egyptian plover is a tiny bird that can often be found feeding in the mouth of a crocodile. The bird eats tiny pieces of food that are trapped between the teeth of the crocodile. The crocodile gets its teeth cleaned and the plover gets a meal.



What type of relationship is this?

- A. mutualism
- B. parasitism
- C. predation
- D. commensalism

9. Most of the electricity generated in Ohio uses coal as a source of fuel. The heat from burning coal turns water into steam, which is used to turn a turbine. The moving turbine generates electricity.

Which describes the energy transformations from coal to electricity?

- A. chemical  $\rightarrow$  thermal  $\rightarrow$  kinetic  $\rightarrow$  electricity
- B. kinetic  $\rightarrow$  chemical  $\rightarrow$  thermal  $\rightarrow$  electricity
- C. kinetic  $\rightarrow$  thermal  $\rightarrow$  chemical  $\rightarrow$  electricity
- D. thermal  $\rightarrow$  kinetic  $\rightarrow$  chemical  $\rightarrow$  electricity

10. Oxygen enters the body through the respiratory system and then goes to the cells. Nutrients are absorbed by the small intestines and then sent to the cells. Wastes that are produced by the cells are removed from the body by various organs such as the skin, kidneys, and lungs.

Which body system is responsible for transporting oxygen, nutrients, and wastes throughout the body?

- A. circulatory system
- B. digestive system
- C. endocrine system
- D. excretory system

Use the information and photo below to answer questions 11–13.

### Uranus

William Herschel, a German-born English astronomer, discovered Uranus in 1781. At first, he was unsure whether it was a star, a comet, or a planet. After observing its motion for several months, he eliminated the possibility that it was a star. Further observations of its motion indicated that it was the 7<sup>th</sup> planet in our solar system. Uranus, unlike the other planets, rotates on its side. In 1977, a ring

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14. Some scientists feel that global warming will affect the population of organisms living in the Great Lakes. They suspect that an increase in the lakes' temperatures would cause an increase in the amount of algae, but a decrease in the number of fish.

What hypothesis would these scientists make

Use the information and diagram below to answer questions 15 and 16.

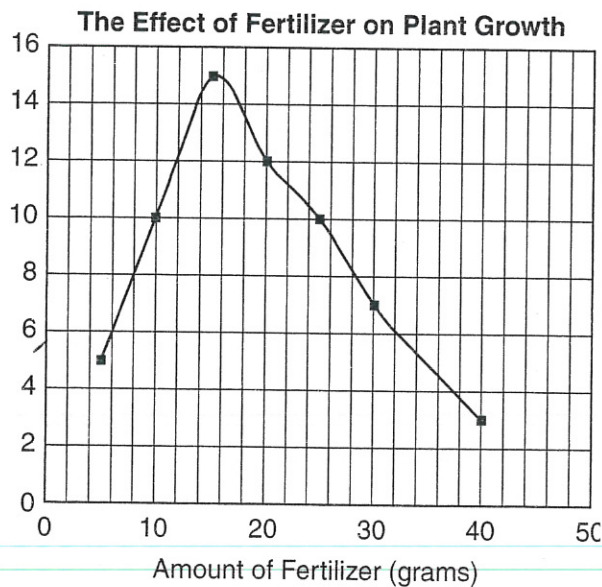
The diagram below shows what happens when ice cubes are added to two glasses, one that contains water and the other that contains alcohol. (Assume that all of the ice

Use the following information in the table to answer questions 17–19.

In an experiment to test the effect of fertilizer on plant growth, a student obtained the following results. There is one blank space in the table.

Amount of Fertilizer (grams)	Average Starting Height (cm)	Average Ending Height (cm)
5	5	10
10	5	15
15	7	22
20	8	20
25	7	17
30	5	12
35	6	
40	6	9

The following graph was made from this data:



17. The graph is missing the label for the y-axis.

What should the y-axis be labeled in the graph?

- A. Growth (cm)
- B. Amount of Fertilizer (grams)
- C. Average Ending Height (cm)
- D. Average Starting Height (cm)

18. No measurement was made for the *Average Ending Height* using 35 grams of fertilizer.

If the *Average Starting Height* of the plants was 6 cm, what do you predict the *Average Ending Height* will be when using 35 grams of fertilizer?

- A. 5 cm
- B. 6 cm
- C. 11 cm
- D. 16 cm

19. Which describes the effect of fertilizer on plant growth?

- A. As the amount of fertilizer increases, the plant growth increases.
- B. As the amount of fertilizer increases, the plant growth decreases.
- C. The amount of fertilizer does not affect the amount of plant growth.
- D. As the amount of fertilizer increases, the plant growth increases up to a point and then decreases.

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20. Which action represents a student solving a problem using technology?

Answer: \_\_\_\_\_

21. Hydrogen peroxide is a compound that is often used to bleach hair. When exposed to light, hydrogen peroxide changes into water.



23. The grasshopper obtains oxygen from its environment through tiny holes called spiracles.

What organ in a fish allows it to obtain oxygen from its environment?

- A. skin
- B. gills
- C. lungs
- D. stomach

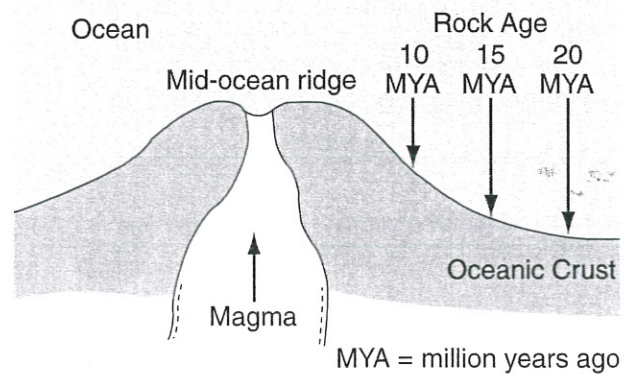
24. What is the main function of the skeletal system?

- A. nourishes the cells
- B. supports and protects the body
- C. moves materials to and from the cells
- D. removes waste products from the body

25. In the last few decades, there has been an increase in the number of products using microelectronics and computer-related technology. The United States has changed from a largely industrial society into one that is more dependent on information services.

Use the diagram showing a profile view of a mid-ocean ridge and the information below to answer question 26.

A mid-ocean ridge is a plate boundary where new rock material is added to crustal plates. It is an area of frequent earthquakes and volcanic activity.



26. Describe how new rocks form along the mid-ocean ridge. Describe the motion of oceanic crust along the mid-ocean ridge, and explain how the age of the rocks on the ocean floor support the motion of the

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Use the following information to answer questions 27-29.

Forces act in pairs. The pair of forces always acts in opposite directions. The forces acting on an object are balanced forces if they are equal, and unbalanced forces if they are not equal. Balanced forces occur when an object is at rest, or if an object continues to move at the same speed and in the same direction. Unbalanced forces occur when an object at rest begins to move, or if an object in motion changes speed or direction.

27. In which example are the forces acting on the object balanced?
- A. an apple falling from a tree
  - B. a car traveling at 10 mph turning a corner
  - C. a car accelerating from 30 mph to 40 mph
  - D. a car traveling at 50 mph along a straight highway
28. A student slides a book across a tabletop. The book slides about 2 meters and stops. The force causing the book to move is the student pushing the book.

What is the opposing force that causes the book to stop?

- A. drag
- B. uplift
- C. gravity
- D. friction

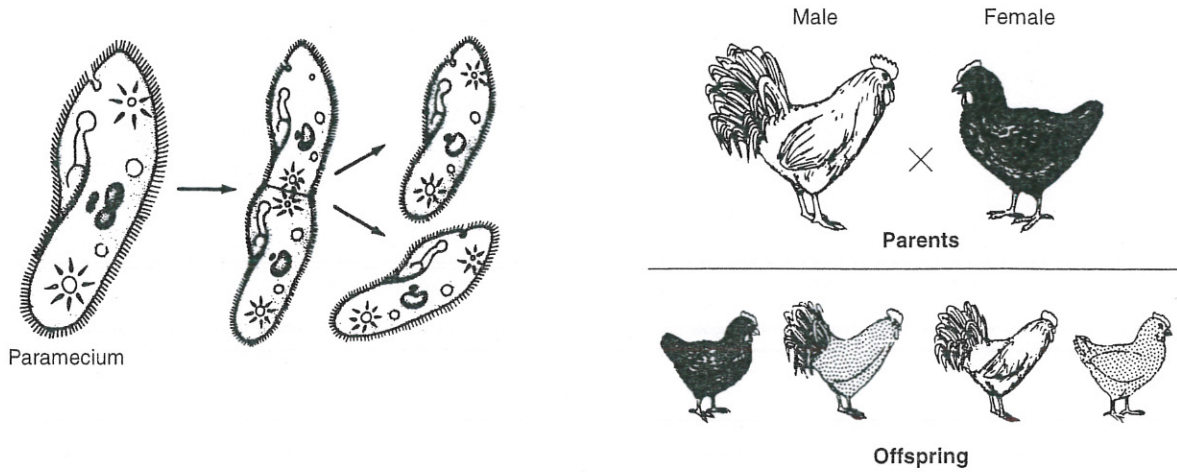
29. A case of soda pushes down on the floor with a 50-newton force. Gravity is the force causing the case of soda to have weight.

What force acting on the case of soda opposes the force of gravity?

- A. friction pushing up with a force of 50 newtons
- B. the floor pushing up with a force of 50 newtons
- C. the floor pushing down with a force of 50 newtons
- D. friction pushing up with a force less than 50 newtons

Use the diagrams and information below to answer question 30.

30. Since all organisms die, reproduction is necessary for the continuation of a species. There are two types of reproduction: sexual and asexual.

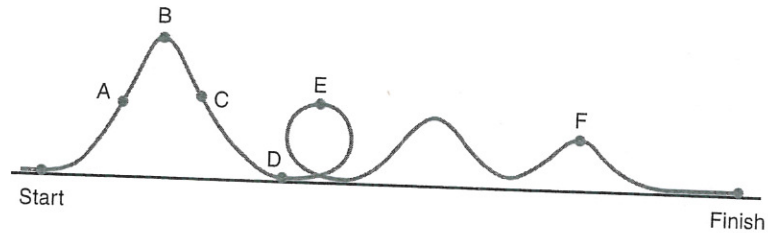


What concept is illustrated by the examples of reproduction in the diagram above?

- A. Sexual reproduction is faster than asexual reproduction.
- B. Sexual reproduction is slower than asexual reproduction.
- C. Sexual reproduction produces less variation than asexual reproduction.
- D. Sexual reproduction produces greater variation than asexual reproduction.

Use the following diagram to answer questions 31-33.

The diagram shows a profile view of a roller coaster. The letters A-F indicate six cart positions along the profile.



31. At what position does the roller coaster cart have the greatest potential energy?
  - A. position B
  - B. position D
  - C. position E
  - D. position F
  
32. How is the potential energy and kinetic energy changing at position C?
  - A. Both the potential and kinetic energy are increasing.
  - B. Both the potential and kinetic energy are decreasing.
  - C. The potential energy is decreasing and the kinetic energy is increasing.
  - D. The potential energy is increasing and the kinetic energy is decreasing.
  
33. The forces acting on the roller coaster cart are unbalanced during the entire roller coaster ride. Give two reasons how you know the forces on the roller coaster cart are unbalanced. (2 points)

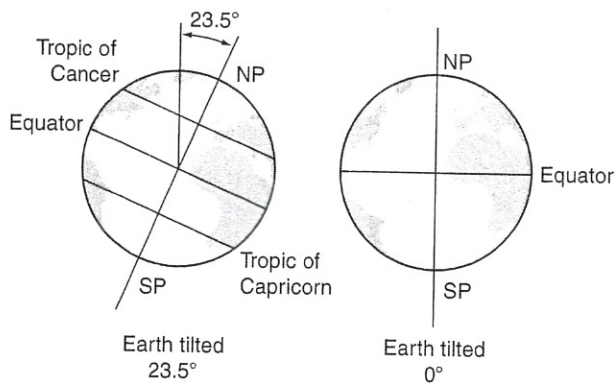
Use the information below to answer question 34.

The table lists in rank order the top 10 states with the most moderate or higher earthquakes from 1974 to 2003.

Moderate or Higher Earthquakes 1974–2003

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Use the diagram below to answer question 35.

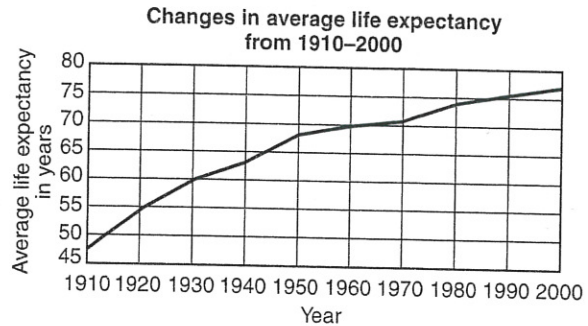


Practice Test 2

35. What change would occur to the seasons in Ohio if Earth were tilted  $0^\circ$  instead of  $23.5^\circ$ ?
- There would only be one season all year long.
  - There would only be winter and summer each year.
  - Summers would be cooler and winters would be warmer.
  - Summers would be warmer and winters would be cooler.

Use the following graph to answer question 36.

The graph shows how the average life expectancy in the United States has changed from 1910 to 2000.



36. What do you think is the most likely reason for this change?
- advances in medical technology
  - advances in educational technology
  - advances in communication technology
  - effects of technology on the environment
37. A student maintains a small terrarium—a container that holds several living things. The terrarium contains worms, frogs, crickets, green plants, air, and water.
- What are two abiotic factors in this environment?
- water and air
  - worms and frogs
  - air and green plants
  - green plants and water
38. What change would occur to the ocean tides on Earth if the moon did not exist?
- There would be no change in tides.
  - The sun's gravity would cause lower high tides and higher low tides.
  - The sun's gravity would cause higher high tides and lower low tides.
  - The sun's gravity would cause one high tide and one low tide each day.