

# **Unit 1: Living Organisms**

12 Which is a characteristic of **most** single-celled organisms?

- A They have a complex nervous system.
- B They contain several different types of cells.
- C They perform all life processes.
- D They have a circulatory and a respiratory system.

13 Which statement **best** describes how a multicellular organism survives?

- A Every cell carries out the same functions for the survival of the organism.
- B The cells all have the same structures that allow the organism to survive.
- C All life processes are performed by each cell for the survival of the organism.
- D The cells have different functions, and together they are essential for the survival of the organism.

14 What is the relationship between the respiratory system and the circulatory system?

- A The respiratory system exchanges oxygen and carbon dioxide with the circulatory system.
- B The respiratory system exchanges oxygen and carbon monoxide with the circulatory system.
- C The respiratory system exchanges oxygen and sugar with the circulatory system.
- D The respiratory system exchanges oxygen and nitrogen with the circulatory system.

- 15 In what way are the digestive and circulatory systems alike?
- A Both protect organs in the body.
  - B Both control movement of the body.
  - C Both absorb gases or nutrients into the body.
  - D Both provide structural support for the body.

32 Which statement **best** explains how a bacterial cell is capable of surviving as a single-celled organism?

- A It is able to create new cells more slowly than other kinds of cells.
- B It is large enough to capture the food it needs for growth.
- C It is so small, it can survive in almost any place.
- D It has the ability to carry out all of its life functions.

34 In what way are the circulatory system and the nervous system similar?

- A They both perform the same function.
- B They are both structural systems.
- C They are both transport systems.
- D They both involve the same organs.

35 Which system in the human body includes the heart, blood, arteries, and veins?

A cardiovascular

B digestive

C muscular

D respiratory



- 51 In what way are insects and humans similar?
- A Both are single-celled organisms.
  - B Both are multicellular organisms.
  - C Both have cells that capture sunlight to make food.
  - D Both have cells that carry out all life functions.

52 Which human body systems are located throughout **most** of the body?

- A digestive and respiratory
- B skeletal and respiratory
- C nervous and circulatory
- D respiratory and circulatory

58 Which statement **best** describes the relationship between the nervous system and the muscular system?

- A The nervous system controls the muscular system.
- B The muscular system controls the nervous system.
- C The nervous system provides nutrients and oxygen for the muscular system.
- D The muscular system provides nutrients and oxygen for the nervous system.

# **Unit 2: Evolution & Genetics**

- 19 A mother rabbit has a litter. One of the babies is born with one long ear and one short ear. What **most likely** caused this one rabbit to be born with one short ear?
- A The mother rabbit had previously lost an ear in an accident.
  - B The mother rabbit became sick before she gave birth.
  - C A mutation occurred during the development of this one rabbit.
  - D This one rabbit received less nutrition than the other rabbits before it was born.

20 Which is an example of a trait that is inherited?

- A dimples
- B intelligence
- C weight
- D favorite color

39 Which of these traits is **most** influenced by a person's environment?

A ability to roll the tongue

B blood type

C weight

D eye color

40 Which is ***most likely*** the reason parents and their children have similar physical traits?

- A They live in the same home.
- B They have similar genetic structures.
- C They are born in similar environments.
- D They have similar blood types.



46 Which is a trait children ***most likely*** inherit from their parents?

- A favorite color
- B food preference
- C freckles
- D weight

- 57 Some people have a “hitchhiker’s” thumb that allows them to bend their thumbs more than other people. How do these people ***most likely*** get this trait?
- A They learn it from friends.
  - B They inherit it from their parents.
  - C They get it as a result of an illness.
  - D They get it as a result of their jobs.

59 Which characteristic is the **best** example of an inherited trait?

- A short hair
- B eye color
- C pierced ears
- D long fingernails

60 Which is an example of a noninherited trait?

- A shape of face
- B hair color
- C food preference
- D tongue rolling

# **Unit 3:**

# **Ecosystems**

9 Which type of animal usually eats both producers and consumers?

A an omnivore

B a carnivore

C a herbivore

D a predator

- 16 Which has the ***greatest*** effect on the amount of salt in a salt marsh?
- A the number of animals living in the marsh
  - B the closeness of the marsh to the ocean
  - C the depth of the water in the marsh
  - D the temperature of the water in the marsh

17 Which classification **best** describes herbivores?

A producers

B consumers

C predators

D decomposers



18 What will be **most** affected if the decomposers in an ecosystem are removed?

- A the spread of disease
- B the availability of water
- C the quality of soil
- D the distribution of organisms

37 This is a food chain that includes grass, a grasshopper, and a bird.

grass → grasshopper → bird

How is the grass in this food chain **best** described?

- A It is a producer, because it makes its own food.
- B It is a producer, because it is eaten by consumers.
- C It is a consumer, because it gets energy from producers.
- D It is a decomposer, because it breaks down sunlight.

38 Which would ***most likely*** cause a decrease in a population of herbivores?

- A an increase in the number of producers
- B a decrease in the types of decomposers
- C an increase in the types of plants
- D an increase in the number of carnivores

53 A mouse eats seeds and insects. Which **best** describes the role of the mouse?

- A consumer
- B decomposer
- C herbivore
- D producer

54 What would **most likely** result if all plants in an area were destroyed?

- A Consumer populations would increase because more sunlight would reach the ground.
- B Decomposer populations would increase because more sunlight would reach the ground.
- C Consumer populations would decrease because plants provide them with water.
- D Consumer populations would decrease because plants provide them with energy.

55 What would **most likely** happen if all of the decomposers in an ecosystem were removed?

- A The animals in the ecosystem would die because of the spread of disease.
- B The plants in the ecosystem would eventually die because of a lack of nutrients in the soil.
- C The plants in the ecosystem would begin to die out because of a decrease in available water.
- D The animals in the ecosystem would eat other types of food because of a decrease in producers.

56 A food chain in an ecosystem includes blackberry bushes, deer, and wolves.

- Deer eat blackberries.
- Wolves eat deer.

If the population of wolves decreases, how will this affect the population of blackberry bushes?

- A It will decrease because there will be fewer deer.
- B It will increase because there will be fewer deer.
- C It will decrease because there will be more deer.
- D It will increase because there will be more deer.

# **Unit 4:**

# **Forces & Motion**



- 1 A wagon is pushed in a straight line. How would an increase in friction on the wagon wheels affect the wagon?
- A It would cause the wagon to move faster.
  - B It would cause the wagon to change mass.
  - C It would cause the wagon to change direction.
  - D It would cause the wagon to slow down.

2 A runner measured the time it took him to run 5 km. What can he calculate from the distance and time measurements?

A direction

B mass

C speed

D force

- 3 Which **best** explains why a bicycle slows down when its brakes are applied?
- A The brakes heat the rubber on the bicycle tires.
  - B The brakes add energy to the bicycle.
  - C The brakes increase the force of gravity on the bicycle.
  - D The brakes cause frictional forces on the wheels of the bicycle.

21 A ball is kicked and rolls along a level field until it comes to a stop. What is **most** responsible for the ball coming to a stop?

- A air
- B gravity
- C mass
- D friction

22 If a car is moving backward along a road, can its speed be measured?

- A Yes, it can, because the car does not have friction acting on it.
- B Yes, it can, because the car travels a distance in a certain amount of time.
- C No, it cannot, because speed can only be measured if the car is moving forward.
- D No, it cannot, because the distance traveled backward by a car cannot be measured.

23 Scientists discover an asteroid that is moving through space. What information is needed to determine the average speed of the asteroid?

- A the mass and size of the asteroid
- B the distance the asteroid is from Earth
- C the direction the asteroid is moving and its distance from Earth
- D how far the asteroid has moved in 24 hours

41 What causes a wagon to speed up when going down a hill?

A gravity

B friction

C air pressure

D mass

- 42 A bowling ball moves across a flat surface at 7 feet per second. If a student is asked to calculate the total distance traveled by the ball, what other information does the student need to know?
- A amount of friction between the ball and the surface
  - B amount of force applied to the ball
  - C total time the ball rolled
  - D mass of the ball



# **Unit 5:**

# **Weather**

4 When the sun warms water, which resulting process occurs?

A precipitation

B runoff

C evaporation

D condensation

- 8 Which is **most** responsible for the changes in seasons?
- A the jet stream
  - B the ocean currents
  - C the distance from Earth to the sun
  - D the tilt of Earth on its axis

- 10 In North Carolina, the wind is blowing from the north. If the wind changes direction and begins to blow from the south, what will **most likely** result?
- A The temperatures will increase.
  - B The temperatures will decrease.
  - C The air pressure will increase.
  - D The wind speeds will decrease.

- 11 Which **best** explains why a storm that affects an area in the western United States may affect an area in the eastern United States a few days later?
- A The jet stream winds blow storms from east to west.
  - B The jet stream winds blow storms from west to east.
  - C Cool Gulf Stream water causes storms to form in the east.
  - D Warm Gulf Stream water causes storms to form in the west.

- 24 One morning, a student notices that the grass in the area is wet, although it had not rained during the night. What could have caused the grass to be wet?
- A During the night, water had evaporated from the trees in the area.
  - B The air above the ground became warmer during the night and caused precipitation.
  - C When the air cooled above ground during the night, water vapor condensed on the grass.
  - D The grass soaked up water from the ground during the night.

29 Which **best** describes the cause of day-to-day weather changes?

- A the rotation of Earth
- B the size of Earth
- C moving air masses
- D action of the winds

30 Students report that the sky in their area has mostly cirrus clouds. What are ***most likely*** the weather conditions in the area?

- A rainy
- B cold
- C windy
- D fair



31 Which **best** describes a hurricane?

A a low-pressure weather system

B a high-pressure weather system

C a cold front

D a stationary front

33 Which instrument is **best** used to predict weather changes?

- A a hygrometer
- B an anemometer
- C a thermometer
- D a barometer

36 How does the energy from the sun influence the water cycle?

- A by trapping water particles in clouds
- B by turning liquid water into water vapor
- C by causing water to precipitate
- D by creating winds in the atmosphere

43 How do plants return water back into the environment?

A by evaporation

B by condensation

C by runoff

D by transpiration

44 Water droplets forming on the outside of a cold glass of water on a hot, summer day is an example of which part of the water cycle?

- A condensation
- B evaporation
- C precipitation
- D transpiration

45 After lake water flows through a dam, which processes are **most** responsible for helping replace the water in the lake?

- A precipitation and runoff
- B transpiration and condensation
- C condensation and runoff
- D transpiration and precipitation

48 On a June day, a warm, moist air mass slowly passes over a colder air mass in North Carolina. What will **most likely** happen next?

- A Rain will fall.
- B Cirrus clouds will form.
- C Skies will clear.
- D Atmospheric pressure will rise.

49 Which is **most** responsible for the movement of weather systems across the United States?

- A the Gulf Stream
- B the prevailing westerlies
- C the southeast trade winds
- D the jet stream



50 Which **best** describes how the Gulf Stream affects the areas along the coast of North Carolina?

- A It causes winds to move from north to south during the winter.
- B It causes winds to move from north to south during the summer.
- C It causes land temperatures along the coast to be colder in the winter.
- D It causes land temperatures along the coast to be milder in the winter.

# **Unit 6: Matter & Energy**

5 Students observed a piece of iron change from shiny to rusty. What caused this change?

A a chemical reaction

B a heat reaction

C a cold reaction

D a physical reaction

6 Which is the **best** example of the transfer of heat by radiation?

- A water boiling
- B ice melting
- C a hot air balloon rising
- D a lightbulb glowing

- 7 Jason fills a glass container completely with water and screws the lid on tightly. He places the container in a freezer. Which will **most likely** result?
- A The container will prevent the water from freezing.
  - B The water will freeze and take up less space in the container.
  - C The water in the container will expand when it freezes and cause the container to crack.
  - D The container will absorb heat from the water, causing it to crack.

- 25 Two liquids are poured together, and a solid substance forms with no liquid remaining. Liquid 1 has a mass of 200 grams, and liquid 2 has a mass of 100 grams. What would be the total mass of the solid substance formed?
- A 100 grams
  - B 150 grams
  - C 250 grams
  - D 300 grams

26 Which is the **best** example of a new substance forming?

A lighting a match

B cutting a piece of paper

C popping a balloon

D hitting a nail with a hammer

- 27 Stirring a cup of hot tea causes a metal spoon to get warm. Which statement **best** explains why the spoon gets warm?
- A Heat energy transfers from the metal spoon to the hot liquid.
  - B Heat energy transfers from the hot tea to the spoon.
  - C Heat energy transfers from the air to the hot liquid, and then to the spoon.
  - D Heat energy transfers from the hot liquid to the cup, and then to the spoon.



- 28 Which material is **best** used to keep cold drinks from getting warm too quickly?
- A glass, because it is a good conductor of heat
  - B foam, because it is a poor conductor of heat
  - C metal, because it radiates heat
  - D paper, because it conducts heat

47 Why are liquids sometimes used in a thermometer?

- A because most liquids condense when heated and evaporate when cooled
- B because most liquids melt when heated and freeze when cooled
- C because most liquids contract when heated and expand when cooled
- D because most liquids expand when heated and contract when cooled