

2019 TAME Middle School State Practice Science Test

- (1) Dr. Dana Scully has observed a flock of birds near the school. She wants to do an investigation that involves the birds. Which question is a testable question?
- A) Why are the birds near the school?
 - B) Do the birds like to eat only at one feeder?
 - C) Do these birds migrate south every winter?
 - D) How many birds come to a feeder with sunflower seeds?

- (2) The law of electric charges states that
- A) like charges repel and opposite charges attract.
 - B) every action has an equal and opposite reaction.
 - C) charged objects that move produce electric current.
 - D) the energy of charges and mass are interchangeable.

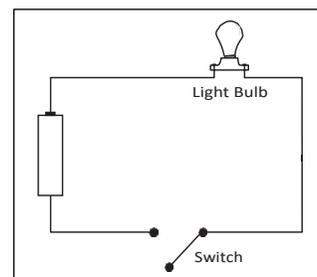
- (3) Which object is **least** likely to be heated during a laboratory activity?
- A) a glass flask
 - B) a closed container
 - C) a glass beaker
 - D) an open container

- (4) A screw is an example of a simple machine that would be **most** useful for
- A) lifting a rock.
 - B) hammering a nail.
 - C) cutting a sandwich.
 - D) opening a corked bottle.

- (5) A cheetah can run at a rate of 30 meters per second. How far could a cheetah travel in 60 seconds?
- A) 90 meters
 - B) 120 meters
 - C) 150 meters
 - D) 1,800 meters

- (6) The drawing to the right shows a simple electrical circuit. What energy conversions occur when the switch is closed?

- A) chemical energy → electrical energy → light energy
- B) light energy → electrical energy → thermal energy
- C) thermal energy → electrical energy → light energy
- D) light energy → chemical energy → electrical energy

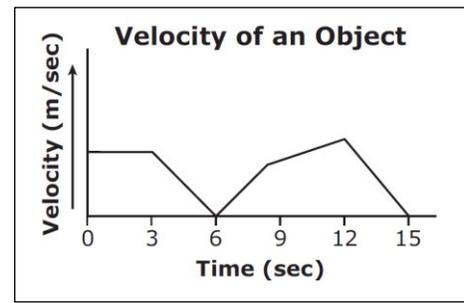


- (7) You can tell that an arthropod is an insect if its body has the following main parts:
- A) antennae, head, and thorax.
 - B) head, thorax, and abdomen.
 - C) head, abdomen, and legs.
 - D) antennae, head, and abdomen.
- (8) Mayly Sánchez performed 50 joules of work by raising an object 2 meters with a pulley. What is the force on the object?
- A) 25 Newtons
 - B) 48 Newtons
 - C) 52 Newtons
 - D) 100 Newtons
- (9) The Andes Mountains of South America were gradually formed when the Nazca and South American tectonic plates collided. Which of these caused this collision?
- A) volcanic activity in Earth's crust
 - B) changes in Earth's magnetic field
 - C) convection currents in Earth's mantle
 - D) movement of material within Earth's core

- (10) Which statement **best** explains how periods on the periodic table are organized?
 A) decreasing atomic mass number from left to right
 B) decreasing number of electrons from left to right
 C) increasing number of neutrons from left to right
 D) increasing atomic number from left to right
- (11) The kidneys, which remove dissolved wastes from the blood, are organs of the
 A) nervous system. C) skeletal system.
 B) endocrine system. D) excretory system.
- (12) What happens to a population and to competition when there is a reduction of living space?
 A) The population increases as competition decreases.
 B) Competition weakens, and the population decreases.
 C) The population expands, and competition intensifies.
 D) Competition strengthens while the population contracts.

- (13) The velocity of an object over time is recorded and then displayed on a graph. During which time interval were the forces on the object balanced?

- A) 0 – 3 seconds
 B) 3 – 6 seconds
 C) 9 – 12 seconds
 D) 12 – 15 seconds



- (14) A teacher puts a cup of coffee into the cup holder of a car. When the car stops suddenly some of the coffee spills out of the cup. Which statement **best** explains why the coffee spills?
 A) The coffee stays in motion because the stopping force acts only on the car.
 B) The coffee stays in motion because a force from the cup holder pulls on the coffee.
 C) The stopping force on the car causes an equal and opposite reaction from the coffee.
 D) The stopping force causes the motion of the car to slow down and motion of the coffee to speed up.
- (15) Which is the first thing that would happen if a plant could **not** obtain carbon dioxide?
 A) It would not be able to make food. C) It would not be able to get rid of waste.
 B) It would not be able to reproduce. D) It would not be able to absorb minerals.
- (16) Many lizards that live in Texas are unable to live in Minnesota. Which statement **best** explains why Texas lizards have difficulty surviving in Minnesota?
 A) They are unable to live where there is no water.
 B) They have the ability to live both on land and in the water.
 C) They are unable to live where temperatures are lower than 30°F.
 D) They have the ability to live where temperatures are above 100°F.
- (17) Why do doctors suggest that people get a flu vaccine each year?
 A) Vaccines get stronger over time. C) Viruses replicate more rapidly over time.
 B) Viruses can mutate from year to year. D) Vaccines are absorbed by the body after a year.
- (18) Which method could be used to separate a solution of table salt and water?
 A) mixing C) settling
 B) evaporation D) filtration

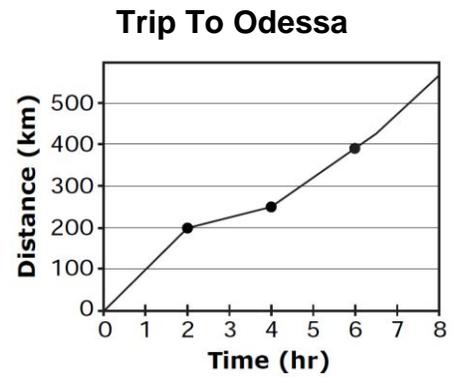
- (19) Most earthquakes occur along or near the edges of the Earth's
A) rivers. C) tectonic plates.
B) continents. D) oceans.
- (20) Which of the following determines the identity of an element?
A) overall charge C) atomic number
B) atomic mass D) mass number
- (21) The sequence of events in the rock cycle depends on
A) the texture of the rock. C) the composition of the rock.
B) the way that the rock formed. D) the processes the rock material goes through.
- (22) If a fluid flows from area A to area B, then area A must be an area of greater
A) drag. C) temperature.
B) pressure. D) mass.
- (23) A difference between birds and reptiles is that birds
A) lack scales, while reptiles have scales.
B) lay amniotic eggs, while reptiles do not.
C) must keep their eggs warm for the embryo to live, while reptiles do not.
D) reproduce by internal fertilization, while reptiles reproduce by external fertilization.
- (24) Which statement **best** describes the development of a human embryo?
A) A single cell becomes many cells. C) All the cells have the same function.
B) Each cell has a different function. D) Many cells combine to form one cell.
- (25) Which gas is the most abundant in Earth's atmosphere?
A) carbon dioxide C) nitrogen
B) oxygen D) water vapor
- (26) People often use a mixture of salt and water to clean contact lenses. Which statement **best** describes this mixture?
A) Salt is the solute and water the solvent. C) Salt is the solution and water the solvent.
B) Salt is the solvent and water the solution. D) Salt is the solvent and water the solute.
- (27) Remote sensing has allowed scientists to
A) study the effect of humans on the global environment.
B) look at changes in vegetation growth.
C) perform large-scale mapping.
D) All of the above are correct.
- (28) Wind turbines are being used to generate electricity in many parts of the United States. One advantage of wind turbines is that no fossil fuels are burned. Which of the following is a disadvantage of wind turbines?
A) Wind turbines may kill flying birds.
B) Wind turbine farms must be located near large bodies of water.
C) Wind turbine farms can provide royalty income to land owners.
D) Wind turbines do not produce energy until many years after being built.

- (29) Which pair of colors is in order from the longest wavelength of light in the visible spectrum to the shortest wavelength?
A) red, violet
B) green, orange
C) violet, blue
D) yellow, red
- (30) Which material is the poorest conductor of heat?
A) aluminum can
B) plastic bar
C) copper bar
D) block of wood
- (31) The lines on a weather map connecting points of equal atmospheric pressure are called
A) contour lines.
B) isobars.
C) lows.
D) highs.
- (32) Which of the following locations contains relatively young coasts that formed because of continental rifting?
A) Hawaii
B) northeastern Japan
C) Gulf of California
D) southern coasts of the Aleutian Islands
- (33) The Earth's mantle is thought to be composed of which of the following?
A) peridotite
B) coal
C) granite
D) slate
- (34) Sodium chloride, commonly called "table salt," is made up of sodium and chlorine that have been combined chemically. Which term **best** describes sodium chloride?
A) acid
B) element
C) atom
D) compound
- (35) Which of the following most likely cause the movement of tectonic plates?
A) gravity from the sun
B) landslides on large continents
C) heat from the Earth's mantle
D) volcanos on the ocean floor
- (36) If two stars are different colors, we can infer that they have different
A) temperatures.
B) masses.
C) shapes.
D) chemical compositions.
- (37) A large cold front is moving past the school on a hot, humid summer day. Which **best** describes the type of weather as the cold front passes by?
A) a drought
B) a monsoon
C) a hurricane
D) a thunderstorm
- (38) A rubber band is stretched between a person's fingers and then released. This **best** demonstrates
A) friction and air resistance.
B) potential and kinetic energy.
C) products and reactants.
D) physical and chemical changes.
- (39) If a species of bird stopped reproducing, which of these would happen?
A) The bird's prey species would decrease in number.
B) The food web that the bird belongs to would collapse.
C) Trees where these birds build nests would grow taller.
D) This bird species would eventually disappear from nature.

- (40) Water is easily trapped in cracks and layers of mountain rock. Alternating high and low temperatures affect the water, which freezes and thaws many times. Which process causes changes to the rocks due to repeated freezing and thawing of trapped water?
- A) wind erosion
B) wind deposition
C) physical weathering
D) chemical weathering
- (41) An example of kinetic energy being changed into heat energy could be
- A) a car brakes stopping a car.
B) a shaken soda bursting out of a soda bottle.
C) a student lifting a heavy box.
D) a space probe drifting toward a planet.
- (42) Ethanol is a type of alcohol made from plants. Sugarcane and corn, which are both used in foods such as cereals and breads, are used to make ethanol. Burning ethanol provides a clean source of energy because the products of ethanol are water and carbon dioxide. Therefore, mixing ethanol with gasoline reduces harmful waste products. Which group would benefit **most** if drivers in the United States fueled their vehicles with an ethanol-gasoline mixture?
- A) oil companies
B) grocery stores
C) crop farmers
D) car manufacturers
- (43) When people walked on the Moon, they found that they could jump higher than they could back on Earth. Why is this true?
- A) The Moon exerts less gravitational force than Earth.
B) The Moon rotates faster than Earth does.
C) There is no atmosphere on the Moon.
D) Space suits helped them jump higher.
- (44) Which activity is **most** likely to add pollutants to the environment?
- A) burning leaves
B) installing a wooden fence
C) pulling weeds from a lawn
D) watering a garden
- (45) If a block of wood has a mass of 24 grams, and the block floats in water, which of the following is a possible volume of the block of wood?
- A) 10 cubic centimeters
B) 30 cubic centimeters
C) 20 cubic centimeters
D) 0.1 cubic centimeters
- (46) An old car's bumper that was coated with chromium does not rust because chromium is
- A) reactive with oxygen.
B) malleable.
C) ductile.
D) not reactive with oxygen.
- (47) The process of cellular respiration occurs in
- A) both in plant and animal cells
B) only in plant cells
C) only in animal cells
D) neither in plant or animal cells
- (48) The seven levels of classification, from general to specific, are
- A) kingdom, phylum, class, order, family, genus, species.
B) kingdom, class, order, phylum, family, genus, species.
C) kingdom, class, phylum, order, family, genus, species.
D) kingdom, phylum, class, family, order, genus, species.

(49) Leland Melvin took a trip to Odessa. Every two hours he noted how far he had traveled. He graphed the data to the right. During which time interval was Leland's average speed the slowest?

- A) 0 – 2 hours
- B) 2 – 4 hours
- C) 4 – 6 hours
- D) 6 – 8 hours



(50) During photosynthesis, plants

- A) combine carbon dioxide with oxygen.
- B) convert thermal energy into kinetic energy.
- C) break down food molecules to release energy.
- D) use light energy to produce new substances with chemical energy.

2018 – 2019 TAME Middle School State Practice Science Test Answer Key

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|------|---|------|---|
| (1) | D | (26) | A |
| (2) | A | (27) | D |
| (3) | B | (28) | A |
| (4) | D | (29) | A |
| (5) | D | (30) | D |
| (6) | A | (31) | B |
| (7) | B | (32) | C |
| (8) | A | (33) | A |
| (9) | C | (34) | D |
| (10) | D | (35) | C |
| (11) | D | (36) | A |
| (12) | D | (37) | D |
| (13) | A | (38) | B |
| (14) | A | (39) | D |
| (15) | A | (40) | C |
| (16) | C | (41) | A |
| (17) | B | (42) | C |
| (18) | B | (43) | A |
| (19) | C | (44) | A |
| (20) | C | (45) | B |
| (21) | D | (46) | D |
| (22) | B | (47) | A |
| (23) | C | (48) | A |
| (24) | A | (49) | B |
| (25) | C | (50) | D |