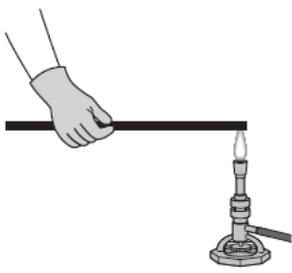
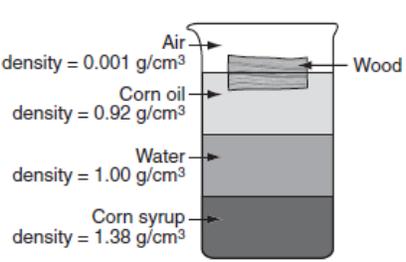
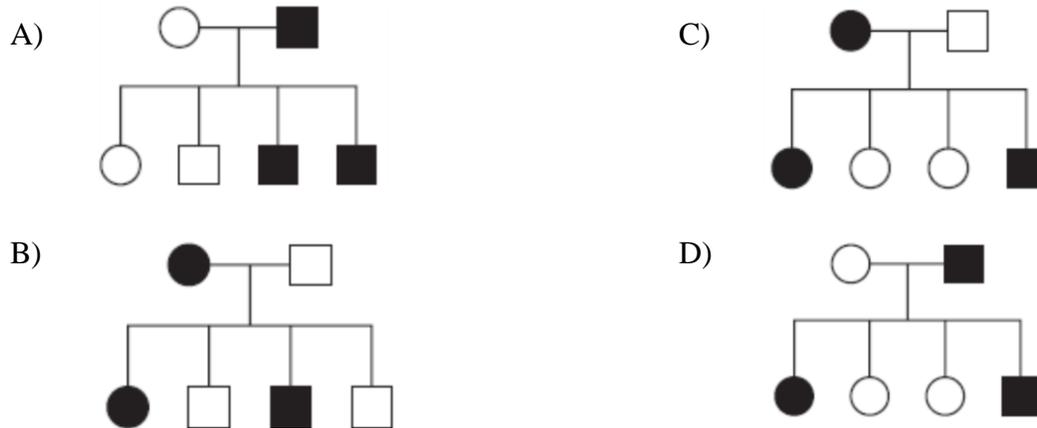
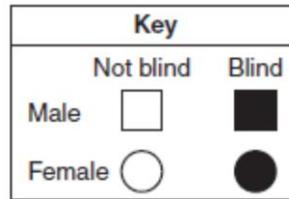


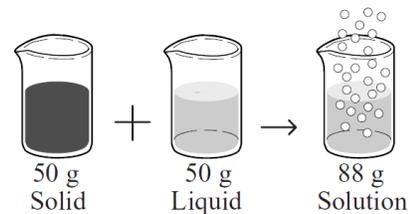
2018 TAME Middle School Practice State Science Test

- (1) A female bear has two male cubs. The first cub grows into a large and aggressive adult bear. The second cub grows to a smaller size and it is not as aggressive as its brother. What problem might the second cub have as an adult?
- A) It might not be able to swim.
B) It might spend more time with the mother bear.
C) It might have a hard time protecting its territory.
D) It might not be able to hear as well as the larger bear.
- (2) Why is it necessary for scientists to compare results from scientific investigations?
- A) to make certain that the results are reliable C) to show how a hypothesis should become theory
B) to find a consumer application for the results D) to ensure that the conclusion is popular
- (3) Which of these is formed when two hydrogen atoms and one oxygen atom combine chemically?
- A) ion C) mixture
B) compound D) element
- (4) In the figure to the right, a gloved hand holds a copper rod directly above a flame. Which statement best describes what will happen after the rod is held above the flame for several minutes?
- A) Both the glove and rod will be cool.
B) Both the glove and rod will be warm.
C) The glove will be cool, and the rod will be warm.
D) The glove will be warm, and the rod will be cool.
- 
- (5) The air, wood, and liquids in the container to the right have different densities. What is most likely the density of the wood?
- A) 0.001 g/cm^3
B) 0.07 g/cm^3
C) 0.95 g/cm^3
D) 1.10 g/cm^3
- 
- (6) Which statement best explains why an object weighs less on Mercury than it does on Mars?
- A) Mercury is denser than Mars.
B) Mercury is less dense than Mars.
C) Mercury is closer to the Sun than Mars.
D) Mercury has a stronger gravitational pull than Mars does.
- (7) An ecosystem contains hawks, mice, grasses, and fungi. Removing which of these populations would directly result in fewer nutrients being returned to the ecosystem?
- A) grasses, because there would be no other organisms producing food
B) fungi, because there would be fewer organisms breaking down wastes
C) hawks, because the population of mice would become too large to find enough food
D) mice, because the population of grasses would become too large for the available space

- (8) A researcher studies blindness in cats. The researcher breeds a cat that is blind with a cat that is not blind. Four kittens are produced with one male and one female kitten that are blind. The other two male kittens are not blind. The researcher uses the key below to make the pedigree for the family of cats. Which diagram shows the pedigree for this family of cats?



- (9) 50 grams of solid reacts with 50 grams of liquid as shown to the right. During the reaction, bubbles form as a gas is given off. The final product is a solution with a mass of 88 grams. How much gas is produced in the reaction?



- A) 12 grams
 B) 38 grams
 C) 50 grams
 D) 100 grams
- (10) NASA astronomers recently pointed out an asteroid that would pass around 1.2 million miles from Earth. Which unit would most appropriately describe the mass of the asteroid?
- A) kilograms
 B) centigrams
 C) kilojoules
 D) kilowatts
- (11) Wind is considered a renewable resource because the energy that drives the wind originally comes from
- A) the jet stream.
 B) rain.
 C) the sun.
 D) the ocean.
- (12) Which hot and dry biome is home to large herds of herbivores that feed on the many kinds of grasses?
- A) rain forest
 B) tundra
 C) desert
 D) savannah
- (13) Which is a biotic factor of an alpine forest?
- A) elk
 B) soil
 C) rainfall
 D) mountains

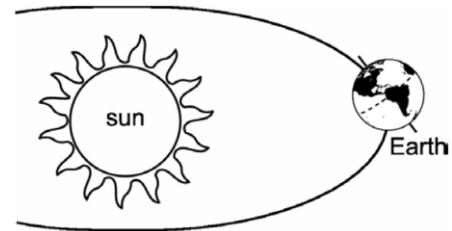
- (14) You are given a flask with a solution of salt and water and asked to separate the two. To do this task you could
- A) evaporate the water and collect the salt.
 - B) use an electric current to separate the salt from the water.
 - C) put it under the microscope to separate the salt and water.
 - D) let the salt settle out and pour off the pure water from the top.
- (15) A stream will probably deposit the most sand and silt where the stream bed is
- A) narrow and level.
 - B) wide and level.
 - C) narrow and steep.
 - D) wide and steep.
- (16) An example of a predator-prey relationship would be
- A) tree - water.
 - B) tick - dog.
 - C) cow - grass.
 - D) hawk - mouse.
- (17) Which statement explains a long-term health effect of vaccinating people for a disease like influenza or malaria?
- A) The disease would be completely eliminated.
 - B) The risk of contracting the disease would be reduced.
 - C) Body cells would mutate to produce a new disease strain.
 - D) Vaccinated individuals would become carriers of the disease.
- (18) Which question about the Guadalupe River can best be answered through scientific inquiry?
- A) Will this river be a fun place to visit?
 - B) How many species of fishes are present in this river?
 - C) How much money should be spent to manage this river?
 - D) Will fishing be a popular sport on this river in five years?
- (19) Which conclusion is supported by the data in the table below?

Mass, Volume, and Density Measurements of Substances

Substance	Mass (g)	Volume (cm ³)	Density (g/cm ³)
copper	5.0	0.56	8.93
copper	10.0	1.12	8.93
zinc	15.0	2.10	7.14
zinc	20.0	2.80	7.14
lead	25.0	2.20	11.36
lead	30.0	2.64	11.36

- A) By increasing the mass of a substance, its density will increase.
- B) By increasing the volume of a substance, its mass will decrease.
- C) By increasing the mass of a substance, its volume will increase.
- D) By increasing the volume of a substance, its density will decrease.

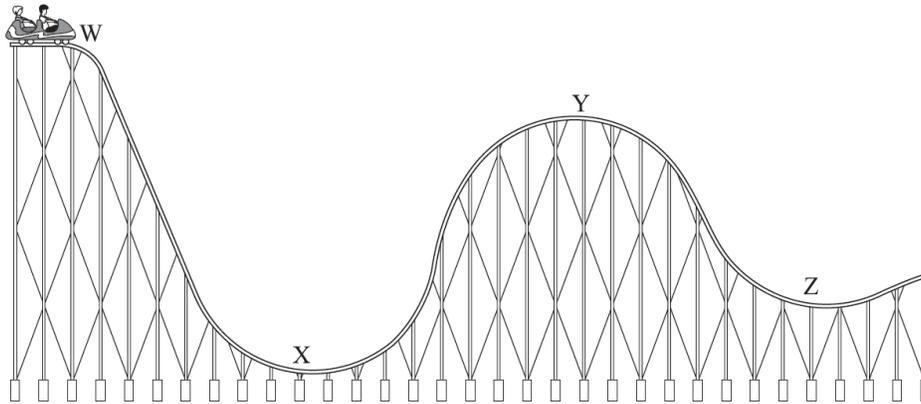
- (30) Which of the following statements best describes the primary difference between animal centrosomes and plant centrosomes?
- A) Animal centrosomes use microfilaments.
 - B) Plant centrosomes do not have centrioles.
 - C) Animal centrosomes are in the cytoplasm.
 - D) Plant centrosomes have a rough exterior made of cellulose.
- (31) Which of the following is an example of analogous structures resulting from convergent evolution?
- A) Feathers on a bird to feathers on a dinosaur
 - B) Flippers on a dolphin to forelimbs on a human
 - C) Webbed feet on a duck to webbed feet on a frog
 - D) Forelimbs on a human to forelimbs on a chimpanzee
- (32) Which element in its normal state contains the most number of protons in its nucleus?
- A) Uranium
 - B) Carbon
 - C) Oxygen
 - D) Hydrogen
- (33) Which rock described below is most likely granite?
- A) silica and sand particles with sand particles cemented together
 - B) calcium and mineral fossils formed by a shallow marine precipitate
 - C) iron and magnesium minerals that cooled quickly from lava at the surface
 - D) quartz and other silica minerals that cooled slowly from magma deep in Earth's interior
- (34) Which of the following best describes the inner planets of our solar system?
- A) large gas planets with thick atmospheres
 - B) dense, rocky planets with few moons
 - C) small planets of ice with elliptical orbits
 - D) barren planets with rings of gas and dust
- (35) Light from a star in another galaxy was being emitted with a wavelength of 550 nanometers. Which of the following is a possible wavelength of light detected by astronomers on Earth?
- A) 550 nanometers
 - B) 650 nanometers
 - C) 1100 nanometers
 - D) 495 nanometers
- (36) The diagram to the right shows the tilt of Earth's axis while Earth is in a certain position in its orbital path around the sun. In this diagram, what season is it in the northern hemisphere?
- A) summer
 - B) winter
 - C) fall
 - D) spring
- (37) Which of the following best describes Earth's tectonic plates?
- A) They form at subduction zones.
 - B) They collide at midocean ridges.
 - C) They move away from each other at the equator.
 - D) They move because of convection currents in the mantle.



- (43) Aristotle taught that a force was always required to keep an object moving. Which of the following states what Newton believed?
- A) Aristotle was correct.
 - B) Aristotle was correct for objects on Earth but not in space.
 - C) An object will keep moving unless an unbalanced force stops it.
 - D) A moving object will eventually stop even though an unbalanced force keeps pushing on it.

- (44) Why is the structure of a sperm cell very different from the structure of an egg cell?
- A) A sperm cell must move to reach the egg cell.
 - B) An egg cell must move to reach the sperm cell.
 - C) An egg cell must divide into many separate sperm cells.
 - D) A sperm cell must combine with many different egg cells.

- (45) The diagram below shows a portion of a roller coaster ride. If energy losses due to friction can be ignored, which of the following statements is correct?



- A) At Position Z, kinetic energy is greater than at Position X.
 - B) At Position Y, potential energy is greater than at Position W.
 - C) At Position X, potential energy is lowest and kinetic energy is greatest.
 - D) At Position W, potential energy is lowest and kinetic energy is greatest.
- (46) Currently, Antarctica is the coldest and driest place on Earth. Paleontologists have found dinosaur fossils in rock layers below the ice. Based on this evidence, which is a reasonable conclusion about the climate of Antarctica in the past?
- A) Antarctica has always had the same climate as at present.
 - B) At some time in the past, Antarctica was a hot, dry desert.
 - C) At some time in the past, Antarctica was much warmer and wetter.
 - D) At some time in the past, Antarctica was colder and wetter than it is now.
- (47) Which statement about gravity is written as a law?
- A) The reason gravity works is because density reduces time and space.
 - B) The effect of gravity on plants might be reduced if certain minerals are added to the soil.
 - C) The force of gravity between two objects depends upon their masses and the distance between them.
 - D) The experiments being done on gravity today are better than what were done in the past and a full understanding is only a few years away.

- (58) Cellular respiration uses one molecule of glucose to produce
- A) 38 ATP molecules.
 - B) 36 ATP molecules.
 - C) 34 ATP molecules.
 - D) 2 ATP molecules.
- (59) RNA is chemically like DNA except that its sugars have an additional oxygen atom, and the base thymine is replaced by a structurally similar base called
- A) alanine.
 - B) codon.
 - C) uracil.
 - D) cytosine.
- (60) Most insects
- A) cannot fly.
 - B) have two pairs of wings and two pairs of legs.
 - C) have two pairs of wings and three pairs of legs.
 - D) have one set of wings and six pairs of legs.

2018 TAME Middle School Practice State Science Test Answer Key

(1) C
(2) A
(3) B
(4) B
(5) B
(6) D
(7) B
(8) B
(9) A
(10) A
(11) C
(12) D
(13) A
(14) A
(15) B
(16) D
(17) B
(18) B
(19) C
(20) B

(21) A
(22) D
(23) A
(24) C
(25) B
(26) D
(27) A
(28) C
(29) B
(30) B
(31) C
(32) A
(33) D
(34) B
(35) D
(36) A
(37) D
(38) C
(39) B
(40) D

(41) D
(42) B
(43) C
(44) A
(45) C
(46) C
(47) C
(48) A
(49) D
(50) C
(51) B
(52) A
(53) A
(54) C
(55) B
(56) D
(57) B
(58) B
(59) C
(60) C