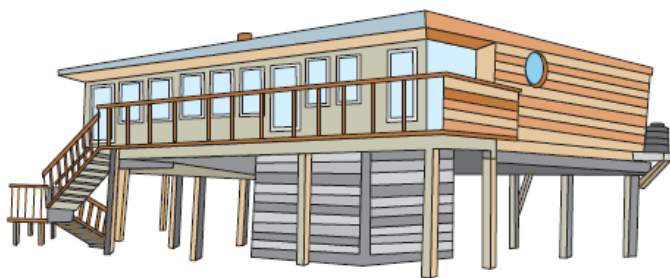


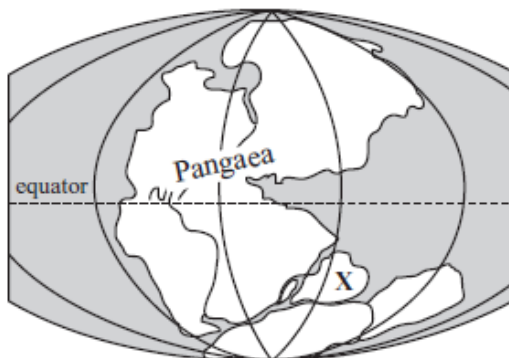
11/19/2016 Houston ISD Science Exam II

- (1) The most useful unit for measuring the diameter of a single human hair is the
A) micrometer. C) meter.
B) kilometer. D) centimeter.
- (2) A hockey puck with a piece of Velcro around its circumference is traveling along smooth ice when it strikes another identical puck with the same type of Velcro but this puck is initially motionless. After the collision
A) the two pucks travel off together twice as fast as the first puck was traveling.
B) the two pucks travel off together at one-half the speed of the first puck's speed.
C) the two pucks travel off together at one-third the speed of the first puck's speed.
D) the two pucks travel off together at one-fourth the speed of the first puck's speed.
- (3) Which of the following countries is not a member country of the International Space Station?
A) Italy C) United Kingdom
B) Russia D) China
- (4) An isotope of an element is different than the original element in that the isotope
A) contains fewer electrons. C) contains more electrons.
B) contains a different number of neutrons. D) contains a different number of protons.
- (5) Joe and Judy are sitting on opposite sides of a perfectly balanced seesaw. If Judy has a mass that is 20% less than Joe's and Joe is sitting 1 meter from the center, how far away from the center is Judy sitting?
A) 0.75 meter C) 1.25 meters
B) 1.20 meters D) 1.80 meters
- (6) Which of the states of the USA produces the most electricity through wind turbines?
A) California C) Texas
B) Florida D) Colorado
- (7) Many houses located near beaches look like the house shown in the drawing below. What does this type of house indicate about the area?



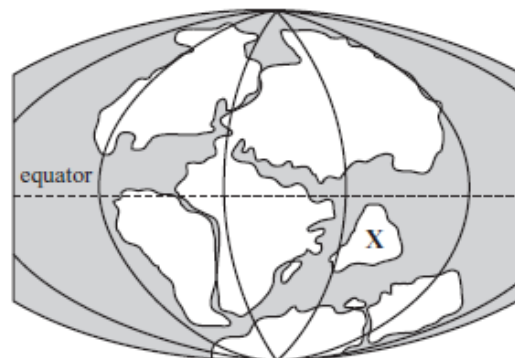
- A) Floods occur in the area. C) Earthquakes occur in the area.
B) The soil is unstable in the area. D) The soil stays frozen in the area.
- (8) A town in north Texas experienced colder than normal temperatures during part of the winter. Which change was most likely responsible for this?
A) A southward dip in the jet stream
B) A northward movement of the jet stream
C) The Coriolis effect creating a low-pressure area
D) The Coriolis effect creating a high-pressure area

- (9) According to Newton's first law of motion, what counteracts gravity to keep a satellite in orbit?
 A) inertia
 B) magnetism
 C) energy
 D) friction
- (10) About 300 million years ago, the land of Earth was in a single mass known as Pangaea, as shown in Figure A. About 150 million years ago, Pangaea broke up into the land masses shown in Figure B. Based on the diagrams, which of the following were more likely to survive on continent X after the breakup of Pangaea than before it broke apart?



300 million years ago

Figure A



150 million years ago

Figure B

- A) organisms that lived in fresh water
 B) organisms that required warm conditions
 C) organisms that hibernated for long periods
 D) organisms that traveled great distances during migrations
- (11) A glass is partially filled with water. Five ice cubes are placed in the glass, causing the level of the water to reach the rim of the glass. Which of the following statements best explains the increase in water level?
 A) The volume of the submerged ice is equal to the volume of water displaced.
 B) The mass of the water in the glass is less than the mass of the ice.
 C) The weight of the ice is less than the weight of the water in the glass.
 D) The density of the water in the glass is greater than the density of the ice.
- (12) The diagram below shows a caterpillar, mold, and a fern. What do these organisms have in common?



Caterpillar



Mold

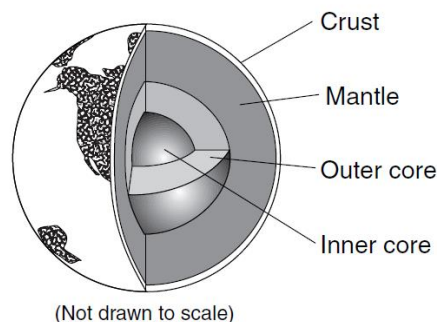


Fern

- A) They are made of cells.
 B) They decompose other organisms.
 C) They produce their own food.
 D) They are disease-causing organisms.

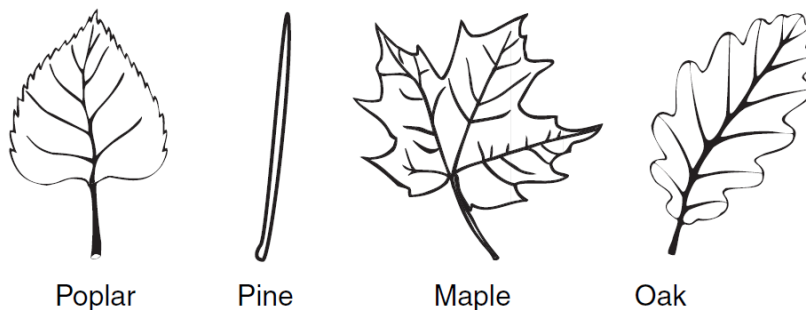
- (13) In addition to oxygen, which gases make up the largest percentage of Earth's atmosphere?
A) hydrogen, helium, and water vapor C) hydrogen, methane, and ozone
B) carbon dioxide, water vapor, and nitrogen D) carbon dioxide, methane, and helium
- (14) What information did scientists study to develop the model of the core of the earth shown below?

- A) recordings of earthquake waves
B) locations of recent volcanic activity
C) core samples from seafloor drillings
D) fossils found in rocks



- (15) Radioactive waste left over from nuclear power plants must be stored in a place that will isolate the waste for many years as the waste decays naturally. Which disposal method provides the safest storage for radioactive waste?
A) diluting the waste by pouring it into a large lake
B) relocating the waste by burying it under mountains in a desert
C) reducing the amount of waste by spraying it on top of a tall mountain
D) filtering the waste by letting it sink into the groundwater
- (16) How do most scientists today believe that the solar system formed?
A) from a spinning cloud made of gas and dust
B) from a black hole that collapsed and turned inside out
C) from a massive planet that exploded into smaller pieces
D) from a large star that spread out and then formed planets
- (17) In 1839, the scientist Theodor Schwann stated that all animals are made of cells. Which technology most likely helped Schwann gather the evidence used to draw this conclusion?
A) computer C) microscope
B) prism D) telescope
- (18) Which substance is classified as a mixture?
A) air C) carbon dioxide
B) nitrogen D) oxygen
- (19) How does adding heat energy affect magnesium fluoride molecules?
A) The motion of the molecules stops. C) The motion of the molecules increases.
B) The motion of the molecules decreases. D) The motion of the molecules is at a constant rate.
- (20) Scientists perform experiments to test hypotheses. How do scientists try to remain objective during experiments?
A) Scientists analyze all results. C) Scientists use safety precautions.
B) Scientists conduct experiments once. D) Scientists change at least two variables.

- (21) A student has one liter of feathers and one liter of iron nails. Which statement best compares the masses of the two samples?
- The masses cannot be compared without a balance.
 - The mass of the feathers is less than the mass of the nails.
 - The mass of the feathers is the same as the mass of the nails.
 - The mass of the feathers is greater than the mass of the nails.
- (22) Many processes on Earth occur at or near tectonic plate boundaries. Which geological events are most common along tectonic plate boundaries?
- erosion and deposition
 - earthquakes and volcanoes
 - hurricanes and tornadoes
 - tidal waves and sedimentation
- (23) A toy car rolls at a constant speed down a straight inclined track. When the car reaches the flat surface at the base of the inclined track, the speed of the car decreases. Which statement best explains why the speed of the car decreases when it reaches the flat surface?
- The force of gravity acting on the car increases.
 - The force of gravity acting on the car decreases.
 - The forces influencing the car are not balanced.
 - The forces influencing the car are balanced.
- (24) The picture below shows four leaves, each from a different tree. Which leaf is best adapted to a dry environment?



- pine
 - maple
 - poplar
 - oak
- (25) Students recorded the findings from Trial 1 and Trial 2 in the data table below. Which mathematical operation can be used to calculate the ratio between the Drop Height (DH) and the First Bounce Height (BH)?

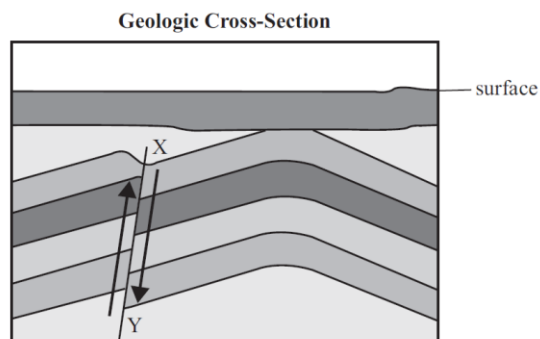
TENNIS BALL HEIGHTS

Drop Heights (meters)	First Bounce Height (meters)
2.00	1.00
1.00	0.53

- $DH + BH$
- $DH \times BH$
- $DH - BH$
- $DH \div BH$

- (26) The motion of a car accelerating in a straight line differs from the motion of a car moving in a straight line at a constant speed. Which change best describes acceleration of a car?
- a change in the direction of the car
 - a change in the distance the car travels
 - the change in velocity divided by the time for that change
 - the change in the time for the car to travel a distance
- (27) When 1 gram of water is evaporated, the volume of the water vapor increases but the mass remains constant. Why does the mass of the water remain constant?
- The temperature of the water remains constant.
 - The pressure acting on the water remains constant.
 - The number of atoms in the water remains constant.
 - The distance between water molecules remains constant.
- (28) During human sexual reproduction one sperm cell unites with one egg cell to produce a fertilized egg that develops into a new organism. Which of the following statements best describes how an offspring receives genetic information from its parents?
- The offspring receives all the genes from each parent.
 - The offspring receives half of its genes from each parent.
 - The offspring receives more genes from the female parent than from the male parent.
 - The offspring receives more genes from the male parent than from the female parent.
- (29) What is the measure of the pull of gravity on an object?
- inertia
 - pressure
 - mass
 - weight
- (30) What is the main function of an individual muscle cell?
- to grow and repair tissues
 - to support and protect organs
 - to relax and contract tissues
 - to transmit and receive impulses
- (31) What describes the event that occurred along line XY in the diagram below?

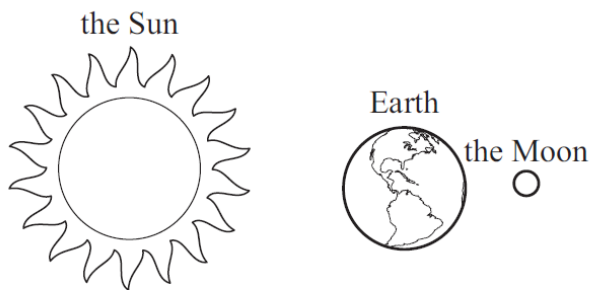
- erosion
- faulting
- sedimentary deposition
- volcanic eruption



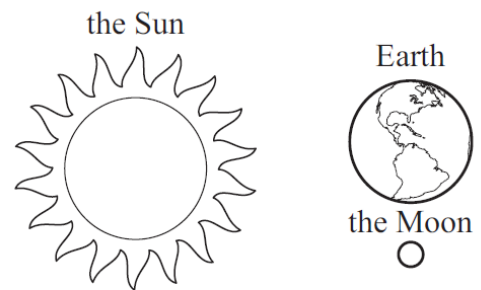
- (32) What is Earth's inner core made of?
- hot gases
 - partly-melted rock
 - dense, solid metals
 - dense, liquid materials

- (33) A scientist tests the effectiveness of a medicine. The medicine is administered to 2,500 volunteers who discontinue all other treatments. What is wrong with this experimental design?
- A) The experiment should include fewer volunteers.
 - B) The experiment should be administered in random dosages.
 - C) The experiment should allow the volunteers to continue other treatments.
 - D) The experiment should include a group that does not take the medicine.
- (34) Which is not an example of a symbiotic relationship?
- A) a tick biting a white-tailed deer
 - B) a caterpillar changing into a butterfly
 - C) a remora fish sticking to the shell of a sea turtle
 - D) a clownfish living within the parts of a sea anemone
- (35) Which diagram below shows the relative positions of Earth, the Moon and the Sun during a lunar eclipse?

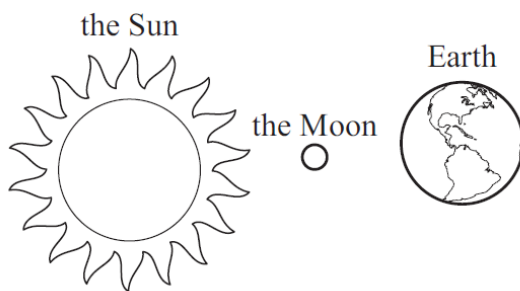
A.



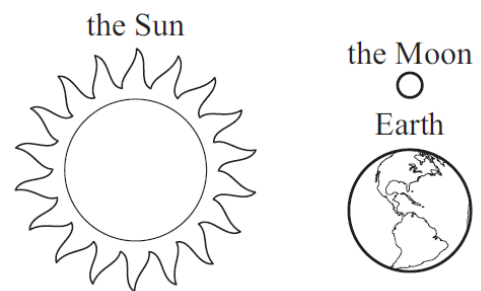
B.



C.



D.



11/19/2016 Houston ISD Science II Test Answer Key

- (1) ___A___
- (2) ___B___
- (3) ___D___
- (4) ___B___
- (5) ___C___
- (6) ___C___
- (7) ___A___
- (8) ___A___
- (9) ___A___
- (10) ___B___
- (11) ___A___
- (12) ___A___
- (13) ___B___
- (14) ___A___
- (15) ___B___
- (16) ___A___
- (17) ___C___
- (18) ___A___
- (19) ___C___
- (20) ___A___

- (21) ___B___
- (22) ___B___
- (23) ___C___
- (24) ___A___
- (25) ___D___
- (26) ___C___
- (27) ___C___
- (28) ___B___
- (29) ___D___
- (30) ___C___
- (31) ___B___
- (32) ___C___
- (33) ___D___
- (34) ___B___
- (35) ___A___

For Graders Use Only

Initials ___ ___ ___

_____ Correct $\times (+5)$ = _____

_____ Wrong $\times (-2)$ = _____

Total Score = _____

Rank _____