

Test Name: Science TAKS Review 8.10 and 8.11

Your Name: _____

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Teacher: _____

Date: _____

Class Name: _____

1. What can you expect to happen as electrical energy is turned into light in both conventional incandescent bulbs and CFLs (compact fluorescent lamps)?
 - A a decrease in usable energy due to heat loss
 - B an increase in usable energy due to increased particle motion
 - C a decrease in the amount of energy going into the system
 - D an increase in the energy efficiency of the system

2. Leigh spent her Saturday training for a triathlon. She ate a healthy serving of carbohydrates the evening before so that her body would have all the energy it needed in her training. As Leigh finished the biking segment and began the run, she noticed that her body temperature was very high. What was causing Leigh's body temperature to increase as she completed her training session?
 - A The outside air was making her hot.
 - B The chemical transformations in her body were creating heat.
 - C The clothing she was wearing has a high insulation value.
 - D The wastes created by energy transformations created heat.

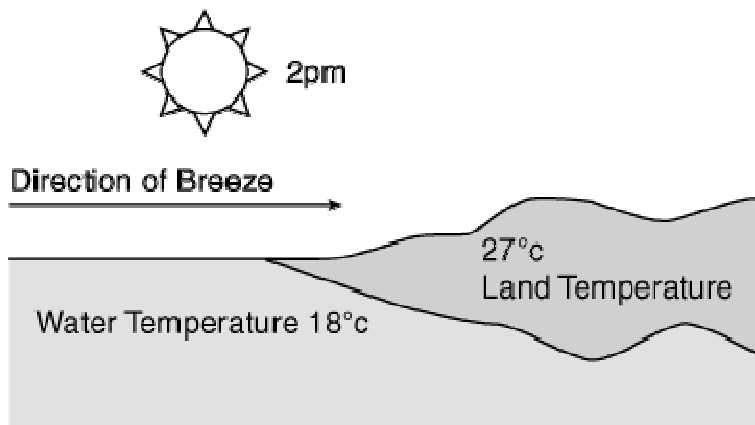
3. The efficiency of energy transformation systems varies. Some are able to utilize more of the original energy than others. Which of the systems described below is the **least** efficient?
 - A a light bulb that burns 80% of the energy received as light
 - B an engine that transfers 89% of its fuel into motion
 - C an oven that burns 75% of its gas as heat
 - D a computer that transforms 78% of its electricity into information transfer

4. Energy transfers occur in many different ways. No energy transfer is ever completely efficient, though. When energy is moved from one place to another, the amount of energy at the end of the transfer will not be the same as the energy at the beginning. Which statement below explains why this is always the case?
 - A It takes energy to move from one place to another.
 - B Not all energy can move from one place to another.
 - C Some energy is always reserved by its original source.
 - D Energy disappears when it is moved from one place to another.

5. Hector is using a frying pan in his kitchen. The pan gets very hot while he is cooking the meat and vegetables in it, so he uses an oven mitt to hold the handle. After he has finished cooking, he leaves the frying pan on the stove to cool so he can wash it. Which of the laws stated below explains why Hector's frying pan will lose its heat as it rests on the stove?

- A An object in motion tends to stay in motion until it is acted upon.
- B Energy cannot be created or destroyed, it can only change form.
- C Energy always moves from where it is greatest to where it is least.
- D For every action there is an equal and opposite reaction.

6. A common local weather pattern near the coast is a sea breeze in the early afternoon. The direction of a sea breeze is from the ocean toward the land. Which of the following is a direct cause of a sea breeze?



- A The land and water having the same temperature during the day.
- B The sun's heat pushing the air toward the land from over the water.
- C The land warming more quickly than the water causing the air over it to rise.
- D The land warming more slowly than the water causing the air over it to sink.

7. What is the main reason why the Earth's equator is warmer than its polar regions?
- A Ocean currents bring warm water to the equator.
 - B Ocean currents bring cool water to the poles.
 - C The poles receive more direct sunlight than the equator.
 - D The equator receives more direct sunlight than the poles.
8. Which statement about the formation of hurricanes is correct?
- A Hurricanes are more likely to form in oceans where there is a significant amount of cold, moist air.
 - B Hurricanes can form anywhere in the ocean as long as there is a large enough source of moist air.
 - C Hurricanes require a significant amount of warm, moist air, so they form only in tropical ocean regions.
 - D Hurricanes in the Atlantic Ocean are most common during the Northern Hemisphere spring.
9. Which of the following forms most waves in the ocean?
- A earthquakes
 - B ocean currents
 - C prevailing winds
 - D the Moon's gravity
10. Put the following interactions between the Sun, the ocean, and the atmosphere in the correct order.
- A. the surface of the ocean heats the air above it
 - B. cooler air becomes warmer and less dense
 - C. the Sun heats the surface of the ocean
 - D. water vapor in the air may condense and form rain
 - E. warm air rises
- A C, A, B, E, D
 - B B, E, D, C, A
 - C D, B, E, C, A
 - D C, A, D, B, E
11. When the sweat on your skin evaporates, it changes its state from liquid to gas. Which observation would support the conclusion that evaporation is endothermic?
- A Sweat leaves behind a layer of salt.
 - B Sweat leaves your skin feeling sticky.
 - C Your skin feels cooler when sweat evaporates.
 - D Your skin feels warmer when sweat evaporates.
12. A reaction is endothermic. What does this indicate about the reaction?
- A Heat energy is absorbed.
 - B Heat energy is released.
 - C Light energy is absorbed.
 - D Light energy is released.

13. A scientist has two liquids. They are both at the same temperature, and they are both different colors. The scientist mixes the two liquids together. Which of the following changes would be the **best** indicator that a chemical change has occurred?
- A a change in volume
 - B a change in color
 - C a change in density
 - D a change in temperature
14. The school nurse gave Margaret an instant ice pack to put on her sprained ankle. When Margaret squeezed the bag, it got very cold. This is an endothermic reaction because
- A heat energy is released which made the bag get cold.
 - B heat energy is first released and then absorbed.
 - C heat energy is first absorbed and then released.
 - D heat energy is absorbed which made the bag get cold.
15. The list of endangered and threatened species grows every day. In fact, conservationists and scientists estimate that Earth loses some 50,000 species every year. What is the single **greatest** threat to endangered and threatened species?
- A pollution of aquifers by chemicals and pesticides
 - B destruction of natural habitats by human development
 - C competition from other organisms and invasive species
 - D recreational human activities such as hunting and fishing
16. Bears are the only major natural predator of caribou and other large herbivores in a natural preserve. After most of the bears in the area were removed by hunting, it was found that the area experienced many problems in soil erosion. What is the **best** explanation for this sudden increase in soil erosion?
- A The bears changed their feeding habits.
 - B The lack of predators allowed large herbivores to spread their range.
 - C The population of large herbivores expanded rapidly, eating much of the groundcover and other vegetation in the region.
 - D The lack of competition from bears resulted in a rise in the population of smaller predators, which reduced the population of small herbivores.

17. Each year, thousands of water buffalo migrate from one area of Africa to another. As they move, the impact of their migration causes physical changes to the surrounding environment. What is the change that these migrations **most likely** have on the ecosystems they move through?

- A The hooves compact and displace soil, causing erosion.
- B Their waste adds nutrients to the soil and causes heavy plant growth.
- C The hooves loosen soil so that plants can grow new roots.
- D Their waste adds nutrients to the waterways and causes algal blooms.

18. Steve owned ten acres of farmland in northern Florida. Rather than farm the land, he decided to let it return to its natural state. He recorded the changes in one area of the land over ten years, as shown in the chart below.

Changes on Property from 1985 to 1995

Year	Description
1985 to 1988	Open field with wildflowers and grasses
1988 to 1991	Small trees, few wildflowers, ferns and grasses
1991 to 1995	Larger maples and birch, ferns, no wildflowers

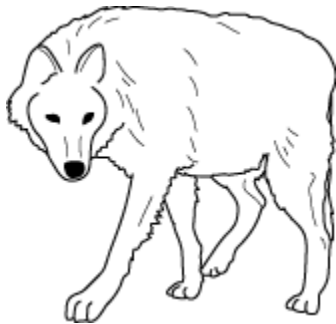
What caused the wildflowers and grasses to stop growing in this area?

- A nutrient loss
- B competition for light
- C competition for water
- D carbon dioxide loss

19. Oxygen in the air is replenished naturally. When trees are cut down, why does it reduce the availability of oxygen in the air?

- A** Less photosynthesis results in less oxygen.
- B** Fewer plants remove more oxygen from the air.
- C** The amount of carbon dioxide is more than that of oxygen.
- D** A rise in the level of carbon dioxide decreases the level of oxygen.

20. Keystone species are species that play a critical role in balancing an ecosystem. A classic keystone species is the gray wolf, which preys on large herbivores such as deer. The gray wolf was hunted nearly to extinction because it also killed farmers' livestock. How would the local ecosystem be affected by removing the gray wolf?



- A** The deer population would heavily increase.
- B** The deer population would drastically decrease.
- C** The livestock population would heavily increase.
- D** It would have little effect.

21. What happens to the land when a forest burns down?

- A** The earth is charred into hard, brittle carbon.
- B** The soil becomes dry, sandy, and infertile.
- C** The soil becomes rich in nutrients and extra fertile.
- D** Animals and plants avoid the area, and it becomes like a desert.

22. Which trait would be considered an acquired rather than inherited trait?

- A** callused fingers
- B** long nose
- C** brown hair
- D** bone structure

23. Children in a certain family all have brown eyes and hair that is short, dark brown, and curly. Of those four traits, three are inherited and one is a result of the children's actions. Which is a result of the children's actions?



- A** brown eyes
- B** curly hair
- C** dark brown hair
- D** short hair

24. Janice has long, slender fingers. This is an example of

- A a trait she acquired from years of piano lessons.
- B a trait she inherited from one of her parents.
- C something she learned from her parents.
- D what happens when the most fit survive.

25. Brown hair is dominant and red hair is recessive. Fran's parents and her siblings all have brown hair, but Fran has red hair. Which of the following is the **best** explanation for Fran having red hair?

- A Her parents both had the genotype Bb.
- B Her parents both had the genotype BB.
- C Her parents both had the genotype bb.
- D Her parents had the genotypes BB and bb.

26. In humans, the genotype of a male is XY. The genotype of a female is XX. The Punnett square below shows the genotype of two parents and four offspring.

	X	Y
X	XX	XY
X	XX	XY

What proportion of offspring would be expected to be male and female?

- A 75% male and 25% female
- B 50% male and 50% female
- C 100% male
- D 100% female

27. A zoo has two bears. Zookeepers want the bears to mate. One bear is brown and has the genotype bb . The other bear is black and has the genotype BB . What color offspring are they **most likely** to produce?

- A all black
- B all brown
- C half black and half brown
- D one-quarter black and three-quarters brown

28. Guinea pigs can be all black, all white, or mixed. The genotype for black is BB , the genotype for white is bb , and the genotype for mixed is Bb . Jennifer mated a black guinea pig with a mixed guinea pig. The Punnett square below shows the genotype of the two parents.

	B	B
B		
b		

What percentage of the offspring would be expected to be mixed?

- A 25%
- B 50%
- C 75%
- D 100%

29. Derrick's mother has brown eyes and his father has blue eyes. The genotype for brown eyes is BB or Bb , and the genotype for blue eyes is bb . Neither Derrick nor his siblings have blue eyes. What is their genotype?

- A BB
- B AB
- C Bb
- D Ab

30. A breed of cat can have either short fur or long fur. The gene for short fur is the dominant gene F. The gene for long fur is the recessive gene f. The Punnett square below shows the genes of two cats.

	F	f
F		
f		

If the two cats produce four offspring, how many will be likely to have short fur?

- A 1
- B 2
- C 3
- D 4