**NOTE: All numbers are not represented because they correspond to the Practice TCAP, and not all questions were rewritten.**  
  
  
1. Ripping a piece of paper in half is an example of a \_\_\_\_\_\_\_\_\_\_ change, while burning   
 the paper is an example of a \_\_\_\_\_\_\_\_\_\_ change.  
  
  
2. An electromagnet is formed when an iron nail is wrapped with \_\_\_\_\_\_\_\_\_\_ .  
 The magnet will be stronger if there are more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .  
  
  
3. On the pH scale, acids have pH levels of \_\_\_\_\_ to \_\_\_\_\_ , neutral substances have a   
 pH level of \_\_\_\_\_ , and bases have pH levels of \_\_\_\_\_ to \_\_\_\_\_ .  
  
  
4\*. *Refer to the front board.* Using the dichotomous key below, the shape drawn on the   
 front board would be known as \_\_\_\_\_\_\_\_\_\_ .

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| square shape | ↱ | hole in middle | ↱ | circular hole | ⟶ | kelab |
| ↳ | triangular hole | ⟶ | tulmer |
| ↳ | no hole in middle | ↱ | solid color | ⟶ | rispara |
| ↳ | with stripes | ⟶ | meedant |

6. True or false: You can predict the age of a fossil based on the layer or rock it is in.   
 \_\_\_\_\_\_\_\_\_\_  
  
  
7. If a population is 15.6% resistant to a pesticide, what percent of the population will be   
 affected? \_\_\_\_\_  
  
  
8. True or false: After heating a substance, it changes color and stays the new color.  
 This means that a chemical change took place. \_\_\_\_\_\_\_\_\_\_  
  
  
9. Which of the following are compounds? **NaCl O Au Fe2O3 H2O Pb K**  
  
  
11. True or false: In a green forest, an adaptation of brightly colored feathers would help   
 a population of birds survive. \_\_\_\_\_\_\_\_\_\_  
  
  
13\*. *Refer to the front board.* The best graph of the information would be Graph \_\_\_\_\_ .  
  
  
15. Earth’s atmosphere is made up of 78% \_\_\_\_\_\_\_\_\_\_ , 21% \_\_\_\_\_\_\_\_\_\_ , 0.93%   
 \_\_\_\_\_\_\_\_\_\_ , and small amount of other elements/compounds.  
  
  
17. The particles in a \_\_\_\_\_\_\_\_\_\_ are vibrating in place while maintaining a constant   
 shape and volume.  
  
  
17b. \_\_\_\_\_\_\_\_\_\_ have a definite volume **and** definite shape. \_\_\_\_\_\_\_\_\_\_ have a   
 definite volume but **not** a definite shape. \_\_\_\_\_\_\_\_\_\_ have **neither** a definite   
 volume **nor** a definite shape.  
  
  
18. Which substance has a density of 6 g/cm3 ? \_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| Substance A mass = 12 g  volume = 6 cm3 | Substance B mass = 2 g volume = 3 cm3 | Substance C mass = 1 g volume = 6 cm3 | Substance D mass = 18 g volume = 3 cm3 |

19. True or false: Compounds contain elements bonded together. \_\_\_\_\_\_\_\_\_\_  
  
  
20. The density of an object with a mass of 20 grams and a volume of 4 cubic centimeters   
 is \_\_\_\_\_\_\_\_\_\_ .  
  
  
21. Ethanol, a fuel made from corn, can be considered to be an \_\_\_\_\_\_\_\_\_\_   
 bioengineered product.  
  
  
22. True or false: A pot of water is heated to boiling, and evaporation occurs. This is an   
 example of a chemical change.   
 \_\_\_\_\_\_\_\_\_\_  
  
  
23. A lithium atom has one valence electron, so it is ( very / semi / not ) reactive.  
 A neon atom has eight valence electrons, so it is ( very / semi / not ) reactive.  
  
  
24. The reactants of the chemical equation **4 Fe + 3 O2 --> 2 Fe2O3** are   
 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .  
  
  
27. A piece of wood weighs 70g. After it burns, it leaves a pile of ash that weights 15g.   
 How much nitrogen dioxide gas was given off in the reaction? \_\_\_\_\_\_\_\_\_\_

29. An unknown substance that turns red litmus paper blue can be described as a/an   
 \_\_\_\_\_\_\_\_\_\_ .

30. To produce an electric current, wrap a magnet with \_\_\_\_\_\_\_\_\_\_ .

32. True or false: In the equation  **KCl --> K + Cl** , KCl is a product. \_\_\_\_\_\_\_\_\_\_

34. True or false: An electromagnet can be made by wrapping loops of wire around a   
 plastic tube. \_\_\_\_\_\_\_\_\_\_

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36. Which of the following are elements? **P Ne B H2O C6H12O11 Au Ag**

38. True or false: When wood burns, the ashes have a lower mass than the original wood   
 because atoms in the wood are destroyed by the extreme heat. \_\_\_\_\_\_\_\_\_\_

39. True or false: Placing a magnet’s north pole to another magnet’s south pole will   
 create an electric current. \_\_\_\_\_\_\_\_\_\_

40. True or false: Ocean tides are caused, in a large part, by the sun’s gravity, and in a   
 small part, by the moon’s gravity. \_\_\_\_\_\_\_\_\_\_

41. You can find the exact volume of an irregular-shaped object by pouring the object   
 and water into a \_\_\_\_\_\_\_\_\_\_ .

42. If a substance has a pH below 7 and corrodes a nail, then it is probably an   
 \_\_\_\_\_\_\_\_\_\_ .

43. Wire coils spinning between two magnets will produce \_\_\_\_\_\_\_\_\_\_ .

44. True or false: The equation **CO2 + 8 H2 --> CH4 + 2 H2O** is balanced. \_\_\_\_\_\_\_\_\_\_  
  
  
46. If nickel has a density of 8.97 g/cm3 , then a block of solid nickel that weighs about   
 720 grams would like have a volume of \_\_\_\_\_\_\_\_\_\_ .  
  
  
48. Earth stays in its orbit because of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .  
  
  
52. True or false: A student testing the acidity of drinking fountain water would want to   
 use an oxygen probe. \_\_\_\_\_\_\_\_\_\_  
  
  
55. True or false: A wooden chair, a lightbulb, a hamburger, and the moon are all made   
 of atoms. \_\_\_\_\_\_\_\_\_\_  
  
  
56. True or false: During a lab, a student mixes Chemical X and Chemical Y, and a new   
 substance is formed…this is the result of all physical changes. \_\_\_\_\_\_\_\_\_\_  
  
  
57. True or false: All of the following are compounds. **Li Po Fe Pb** \_\_\_\_\_\_\_\_\_\_  
  
  
58. A combination of salt and pepper can best be classified as a \_\_\_\_\_\_\_\_\_\_ because no   
 new chemical bonds form between the salt and the pepper.  
  
  
59. The two elements that make up 99% of Earth’s atmosphere are \_\_\_\_\_\_\_\_\_\_ and   
 \_\_\_\_\_\_\_\_\_\_ .  
  
60. True or false: In a gas, the molecules are arranged in a tightly connected structure.   
 \_\_\_\_\_\_\_\_\_\_  
  
  
61. If a 10-gram sample of liquid mercury takes up 10 milliliters of space in a beaker,  
 then the mercury’s density is \_\_\_\_\_\_\_\_\_\_ .  
  
  
62. True or false: Sugar dissolving into water is an example of a physical change.   
 \_\_\_\_\_\_\_\_\_\_  
  
  
64. A powder dissolves in a liquid. Heat is given off, and a solid is formed. This reaction   
 involved a \_\_\_\_\_\_\_\_\_\_ change.  
  
  
66. True or false: During all chemical changes, there is a phase change from solid to   
 liquid or liquid to solid. \_\_\_\_\_\_\_\_\_\_  
  
  
68. True or false: The oldest fossils will be found on the bottom-most layer of rock.   
 \_\_\_\_\_\_\_\_\_\_  
  
  
69. If a sample has a pH level of 7, then it would be considered \_\_\_\_\_\_\_\_\_\_ .