

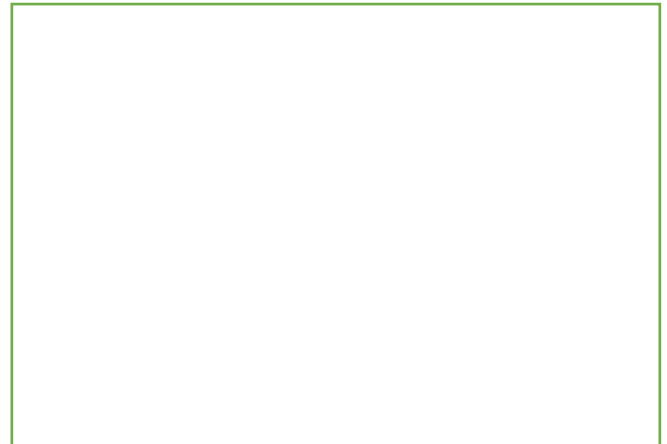
Name \_\_\_\_\_

Date \_\_\_\_\_

Period \_\_\_\_\_

### Semester Exam Review (part 1)

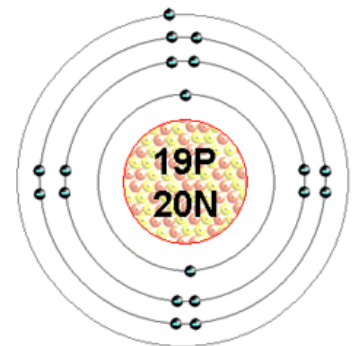
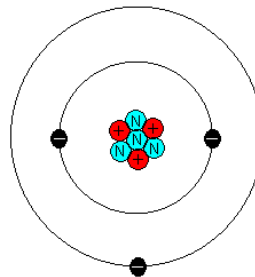
1. Draw the atomic structure of lithium, label the particles on your drawings, and write the electrical charge of each particle on the blanks below:
  - a. Protons \_\_\_\_\_
  - b. Neutrons \_\_\_\_\_
  - c. Electrons \_\_\_\_\_
  - d. Energy levels \_\_\_\_\_
  - e. Nucleus \_\_\_\_\_
  - f. Number of Valence electrons \_\_\_\_\_



2. Explain two different ways to determine the amount of neutrons of this element
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_

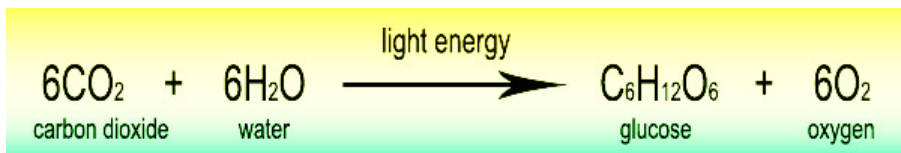
5
B
10.81

3. How can you determine the atomic mass of an atom?
4. How many Oxygen atoms are in the glucose formula?  $C_6H_{12}O_6$
5. How many atoms are in chemical formula for sodium sulphate?  $Na_2SO_4$
6. What are the similarities of these two atoms below?



7. Write in the space provided if the atoms above are similar or different?
  - a. Reactivity \_\_\_\_\_
  - b. Chemical properties \_\_\_\_\_
  - c. Atomic number \_\_\_\_\_
  - d. Energy levels \_\_\_\_\_
8. What does the law of conservation of matter states?

9. From the photosynthesis equation, answer the following questions below

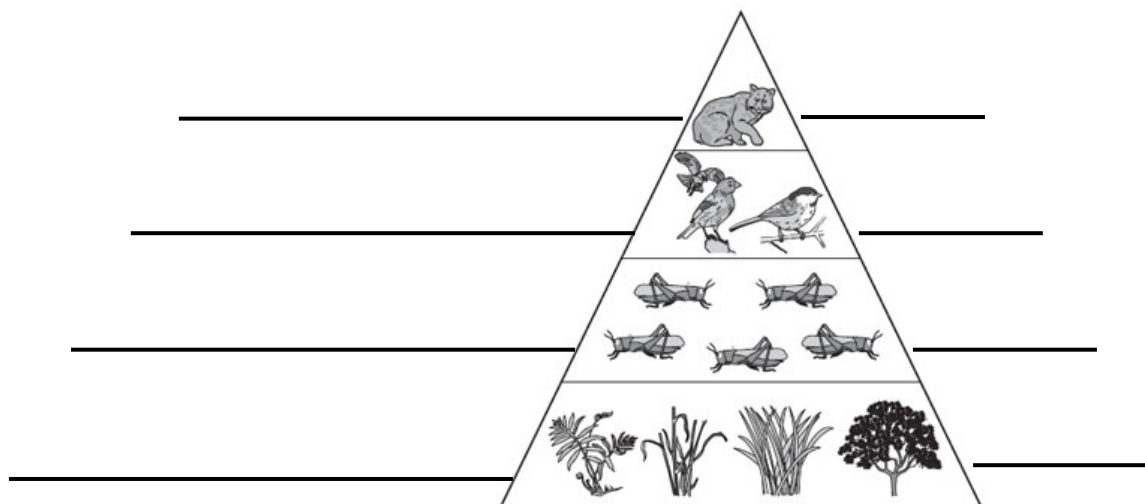


- a. Which substances are on the reactants?
  - b. Which substances on the products?
  - c. How many Oxygen atoms are in the carbon dioxide formula?
  - d. Total amount of elements in glucose?
  - e. How many hydrogens in the water formula?
  - f. Is the amount of carbons from the reactants similar or different to the amount of carbons on the products?
  - g. Is the amount of elements on the reactants similar or different to the amount of elements on the products?
  - h. Is the total amount of atoms from the reactants similar or different to the total amount of atoms on the products?
  - i. Are the substances on the reactants different or similar to the substances on the products?
  - j. Is the equation balanced or unbalanced?
10. Is the equation above an example of the law of conservation of matter? Explain why or why not.
11. What is the chemical change (chemical reaction) mnemonic phrase?
12. Write the answers to the mnemonic phrase for chemical reactions below
13. All organic matter always contains this element in their formula \_\_\_\_\_
14. Our body can break down nutrients during digestion by physical (mechanical) and chemical means. Explain if the examples below are physical or chemical means?
- a. Chewing with our molars (turning food into smaller pieces) \_\_\_\_\_
  - b. Dissolving sugars into starch with saliva \_\_\_\_\_
  - c. Peristalsis (moving food towards the stomach by muscle contraction) \_\_\_\_\_
  - d. Stomach churning and mixing food \_\_\_\_\_
  - e. Bile breaking down fats into smaller molecules \_\_\_\_\_

15. What is organic matter?
16. The reactivity of elements of the same group are \_\_\_\_\_
17. Name 3 elements with similar reactivity
18. Name 3 elements that are inert (do not react)
19. Why do elements from question # 18 do not react?
20. According to the law of conservation of mass, after a chemical reaction, the number of \_\_\_\_\_ for each \_\_\_\_\_ must be the same on \_\_\_\_\_ sides of the equation
21. After a chemical reaction, the substances created in the products will be \_\_\_\_\_ from the reactants
22. Match the following properties of metals below

A. Ability of metals to bend, be shaped into sculptures, and be pounded into sheets of metals	_____ Luster
B. Ability of metals to be stretched into wires	_____ Ductility
C. Ability of metals to conduct electricity and heat	_____ Malleability
D. Ability of metals to shine	_____ Density
E. Ability of metals to weight a lot	_____ Conductivity

23. The amount of energy transferred within organisms in an ecosystem is clearly explain with an energy pyramid. This concept is known as the \_\_\_\_\_ Rule. This rule states that only \_\_\_\_\_ of the available energy can be pass to the next \_\_\_\_\_ level. Fill in the information on the pyramid below.



24. Label the following list on the blanks provided on the pyramid above:

<ul style="list-style-type: none"> <li>• Secondary consumer</li> <li>• Producer</li> <li>• Top Predator</li> <li>• Primary consumer (Herbivores)</li> </ul>	<ul style="list-style-type: none"> <li>• 18 kilo calories</li> <li>• 18000 kilo calories</li> <li>• 180 kilocalories</li> <li>• 1800 kilocalories</li> </ul>
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25. Write 3 chemical formulas with organic compounds and 3 inorganics in the space below

Organic compounds	Inorganic compounds
1.	1.
2.	2.
3.	3.

26. Which elements are the most reactive in the periodic table?

27. Choose 4 elements from period 3 (from the periodic table) and place them in order from the least to the most reactive

\_\_\_\_\_

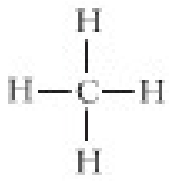
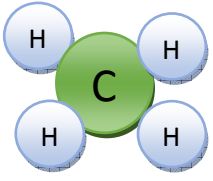
28. Consider the following equation.. 2 eggs + 1 cup of milk + ½ bag of flour  $\Rightarrow$  10 pancakes  
Write the balanced equations for each experiment if the end result were..

Experiment 1= 40 pancakes \_\_\_\_\_  
 Experiment 2= 20 pancakes \_\_\_\_\_  
 Experiment 3= 60 pancakes \_\_\_\_\_

29. Write if the following represents an element, a molecule, or a compound

- N<sub>3</sub> \_\_\_\_\_
- H<sub>2</sub>O \_\_\_\_\_
- Fe \_\_\_\_\_
- NO<sub>3</sub> \_\_\_\_\_
- O<sub>2</sub> \_\_\_\_\_
- Li \_\_\_\_\_
- H \_\_\_\_\_

30. Write the elements and the amount of atoms in the following..

	<p>CH<sub>4</sub></p>	

31. Are the examples above similar or different? \_\_\_\_\_

32. Why?