InterActions Unit 6 Chapter 2 Sample Quiz

See the Scientists' Consensus Sheets for assistance.

1. The covalent interaction is

    a. a type of electric-charge interaction between atoms in an element.

    b. a type of electric-charge interaction between atoms in a molecule.

    c. a type of electric charge interaction between atoms in an ion.

    d. a type of electric charge interaction between atoms in a metal.

2. The molecule methane is composed of 1 carbon atom and 4 hydrogen atoms. In symbolic form Methane is written as:

    a. $C4H$

    b. $C + H_4$

    c. CH_4

    d. $C + 4H$

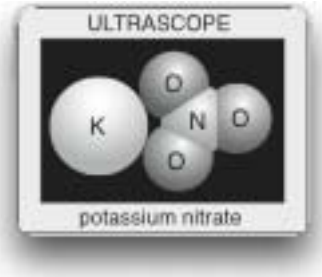
3. How many bonds are made with the oxygen atoms in the potassium nitrate molecule?

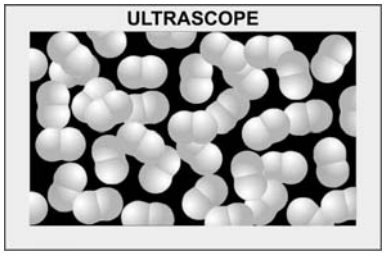
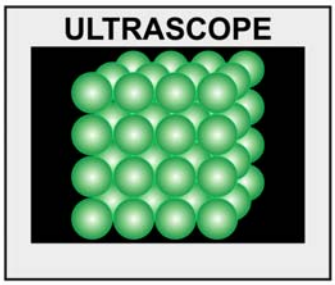
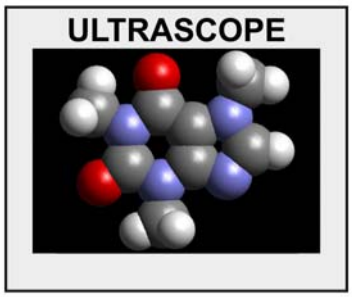
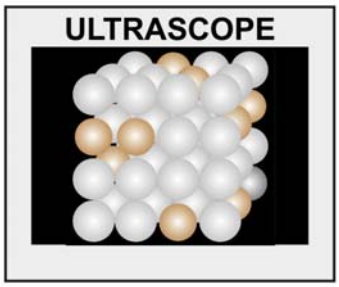
    a. 2

    b. 3

    c. 4

    d. 5



A. 	B. 
C. 	D. 

4. Which of the Ultrascope images above represents molecules with covalent bonds?

   a. A and B

   b. C & D

   c. A & C

   d. A, B, & C

5. When methane is burned it interacts with oxygen to form carbon dioxide and water vapor. What are the reactant(s) and product(s) of this interaction?

    a. **reactants**: methane and carbon dioxide; **products**: water and oxygen.

    b. **reactants**: dioxide and carbon; **products**: methane, oxygen and water.

    c. **reactants**: oxygen and carbon dioxide; **products**: methane and water

    d. **reactants**: methane and oxygen; **products**: carbon dioxide and water.

6. During a chemical interaction

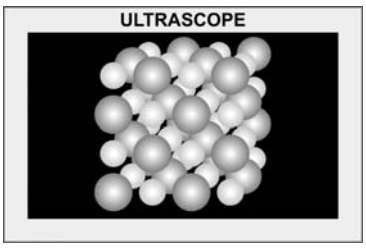
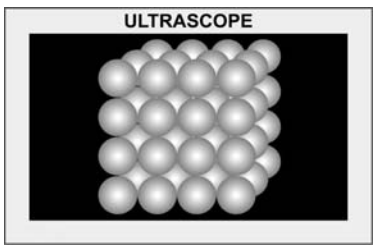
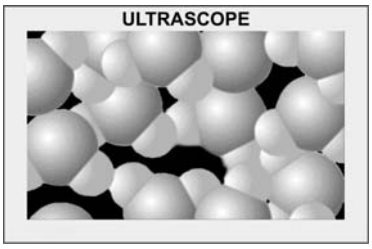
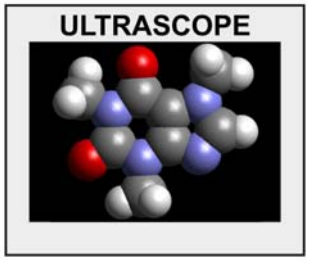
    a. two molecules collide and form a new atom.

    b. two molecules collide and the atoms recombine to form one or more new molecules.

    c. two molecules combine during a cohesive interaction and the atoms recombine to form one or more new molecules.

    d. two molecules combine during a cohesive interaction and the atoms recombine to form a new atom.

Images for questions 6-7

A. 	B. 
C. 	D. 

7. Which of the above images shows an ionic bond?

    a. A

    b. B

    c. C

    d. D

8. Which of the above images shows a metallic bond?

    a. A

    b. B

    c. C

    d. D

9. The stored chemical bond energy is

   a. the sum of all the energies including stored volume energy, stored phase energy, and, stored cohesion energy.

   b. the sum of energies stored in all the bonds including those in the nucleus.

   c. the sum of energies stored in all the cohesive bonds between molecules.

   d. the sum of energies stored in all the chemical bonds between neighboring atoms/ions.

10. . Which sentence best describes a balanced chemical equation?

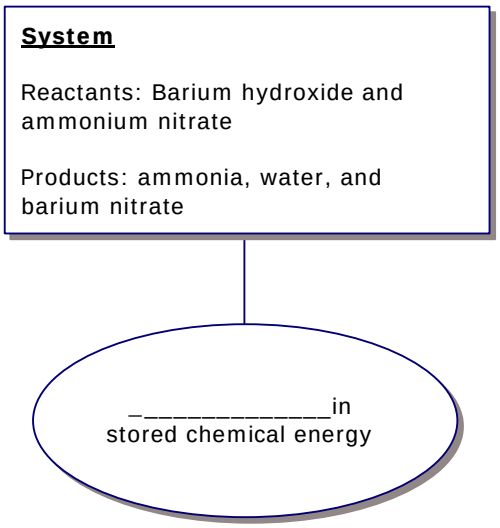
   a. The number of atoms of each element is the same in both the reactants and products.

   b. The total number of molecules is the same in both the reactants and products.

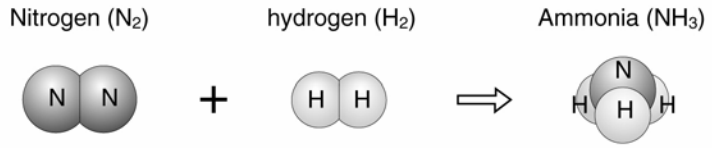
   c. The mass of each atom is the same before and after the chemical reaction.

   d. The mass of all the atoms in the reactants is the same, and the mass of all the atoms in the products is the same.

11. Below is an incomplete energy diagram for the reaction between barium hydroxide and ammonium nitrate to produce ammonia, water, and barium nitrate. When these two substances are mixed together in a flask, the flask feels cool. Draw and label the energy transfer arrow (energy input or energy output and the type of energy transfer). Fill in the blank of the energy oval.



12. Nitrogen (N_2) and hydrogen (H_2) combine to produce silver chloride and Ammonia (NH_3). An unbalanced picture equation for this chemical reaction is show below. Balance the picture equation by drawing in any necessary atoms or molecules. .



Check that the equation is balanced by completing the table:

	REACTANTS	**PRODUCTS**
Keeping Track of the Atoms	**Number of _____ atoms:** . **Number of _____ atoms:** . **Number of _____ atoms:** . **TOTAL:**	**Number of _____ atoms:** . **Number of _____ atoms:** . **Number of _____ atoms:** . **TOTAL:**

Write the balanced symbolic equation below.

13. A carbon atom

    a. cannot bond with many types of atoms.

    b. can bond in many ways with other carbon atoms and other elements.

    c. can bond in many ways but are not commonly found in nature.

    d. bond only with other carbon atoms.

14. Which item below does not describe a synthetic polymer?

    a. made in the laboratory.

    b. come from coal or oil.

    c. consist of proteins.

    d. used to make shampoo bottles and grocery bags.

15. The human body is composed primarily of

    a. fat.

    b. salt.

    c. carbohydrates.

    d. water.

16. Which of the following is NOT true about fats? Fats are:

    a. polymers.

    b. an efficient way to store energy.

    c. a poor insulator

    d. do not dissolve in water

17. The main function of proteins is

    a. an energy source for life.

    b. chemically reacting with enzymes .

    c. dissolving other chemicals necessary for life.

    d. making enzymes that control chemical reactions.

18. Which statement is NOT TRUE about DNA molecules. DNA molecules

    a. are polymers.

    b. are in the nucleus of every cell.

    c. have chemical regulators to turn on only the needed genes.

    d. exist in each cell (except blood cells) and each cell contains an identical set of DNA.