Name _____ Class _____ Date _____

SECTION 2-1 REVIEW

COMPOSITION OF MATTER

VOCABULARY REVIEW Define the following terms.

1. atom _____

_____

2. neutron _____

_____

3. compound _____

_____

4. covalent bond _____

_____

5. ion _____

_____

MULTIPLE CHOICE Write the correct letter in the blank.

_____ **1.** The atomic number of carbon is 6. Therefore, the number of protons in a carbon atom equals

a. 3. **b.** 6. **c.** 7. **d.** 12.

_____ **2.** One of the kinds of particles found in the nucleus of an atom is the

a. proton. **b.** electron. **c.** ion. **d.** boron.

_____ **3.** The maximum number of electrons that can be held in the orbitals in an atom's second energy level is

a. 2. **b.** 4. **c.** 6. **d.** 8.

_____ **4.** Of the following elements, the one that is most likely to form ionic bonds is

a. hydrogen. **b.** carbon. **c.** sodium. **d.** oxygen.

_____ **5.** An example of a compound is

a. water. **b.** hydrogen gas. **c.** oxygen gas. **d.** chloride ion.

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SHORT ANSWER Answer the questions in the space provided.

1. What is the difference between mass and weight? _____

2. Identify the elements and the number of atoms of each element in each of the following compounds:

   BO_2 _____ KCl _____

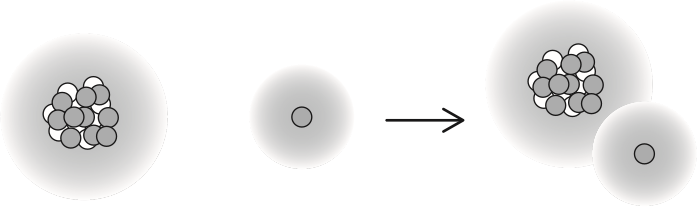
   $C_6H_{12}O_6$ _____ NH_3 _____

3. How many pairs of electrons do the two oxygen atoms in an oxygen molecule share with each other? Explain your answer. _____

4. **Critical Thinking** The atomic number of argon is 18. Will argon tend to form bonds with other elements? Explain your answer. _____

STRUCTURES AND FUNCTIONS Use the figure to answer the following questions.

The diagram below shows bonding of a hydrogen atom with a chlorine atom. The atomic number of hydrogen is 1. The atomic number of chlorine is 17. The orbitals corresponding to the third energy level can hold up to 8 electrons.



Cl H HCl

1. What kind of bond is formed between hydrogen and chlorine atoms?

2. Describe the formation of this bond and the total number of electrons in the orbitals of each energy level.