

Answer questions 1-5 on page 137

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_

2. Indicate whether the following descriptions apply to a *compound*, *mixture*, or *both*.

- |                                                           |          |
|-----------------------------------------------------------|----------|
| a. always mixed in the same ratio                         | a. _____ |
| b. can write a chemical formula for                       | b. _____ |
| c. Making is a chemical change                            | c. _____ |
| d. a substance                                            | d. _____ |
| e. can be mixed in any ratio                              | e. _____ |
| f. has properties different from the things it is made of | f. _____ |
| g. is the same everywhere                                 | g. _____ |

3. What is a chemical bond?

4. Indicate whether the following describes a *covalent bond*, *ionic bond*, or *metallic bond*.

- |                                   |          |
|-----------------------------------|----------|
| a. shares valence electrons       | a. _____ |
| b. between two nonmetals          | b. _____ |
| c. transfers valence electrons    | c. _____ |
| d. between metal atoms            | d. _____ |
| e. free flowing valence electrons | e. _____ |
| f. between a metal and a nonmetal | f. _____ |
| g. Forms molecules                | g. _____ |
| h. Between ions                   | h. _____ |

5. What is a network solid?

6. What properties does a network solid have?

7. What information does a chemical formula give you?

8. What information doesn't a chemical formula give you?

9. What is a molecule?

10 Why are valence electrons important in how atoms react?

11. How many valence electrons do each of the following have?

a. I \_\_\_\_\_

b. B \_\_\_\_\_

c. Ca \_\_\_\_\_

d. He \_\_\_\_\_

e. Ar \_\_\_\_\_

12. Why are metals malleable?

13. Why are ionic compounds brittle?

14. Why do metals conduct electricity?

15. When can ionic compounds conduct electricity? When can't they?

16. Why can't we say "molecules" of NaCl?

17. What is a polar bond?

18. What is a polyatomic ion?

19. Use electron dot diagrams to show how the following form ionic bonds

a. K and N

b. Be and I

20. Use electron dot diagrams to show how the following form covalent bonds

a. F<sub>2</sub>O

b. NI<sub>3</sub>

c. N<sub>2</sub>