

**Physical Science**  
**Week 5: Text pp. 133-145**

**True (+) or False (0): Write all answers on the answer sheet.**

1. Atoms seek to have 8 electrons in their outermost shell.
2. Elements in the B groups of the periodic table have the same number of valence electrons as their group number.
3. Elements shaded in blue on p133 are metals.
4. Noble gases rarely combine with other elements.
5. Helium is a noble gas.
6. Properties (characteristics) of matter can be classified into 3 types.
7. The boiling point of water is a chemical property.
8. Oxygen normally exists as molecules of O<sub>2</sub>.
9. O<sub>2</sub> is not considered to be an element.
10. H<sub>2</sub>O is an element.
11. A molecule of table sugar has 45 atoms in it.
12. Mixtures contain several elements or compounds that are chemically united.
13. Milk is a mixture.
14. In the chemical name octane, the octa part refers to the number 10.
15. A molecule of carbon monoxide has 1 oxygen atom. Carbon dioxide has 2.
16. H<sub>2</sub>O is an example of a structural formula.
17. A chemical bond that results from the sharing of valence electrons between atoms is called a covalent bond.
18. Covalent bonds can be single, double, or triple.
19. In a covalent bond, if one atom has a stronger attraction for the shared electrons, a polar covalent bond is formed.
20. In a polar covalent bond, one end of the molecule has a partial negative charge and the other end has a partial positive charge.
21. The second major type of bond is an ionic bond.
22. A sulfate ion is SO<sub>4</sub>.
23. The top of p145 says that elements toward the left on the periodic table tend to lose their valence electrons in bonding (ionic).
24. Al loses 2 electrons in bonding (ionic).
25. Neon's outer shell is already complete.

**Fill in the answers on the answer sheet:**

1. On the periodic table, elements are arranged by their increasing   ?  .
2. What is the atomic number for gold?
3. What is the atomic mass for mercury?
4. Oxygen is in what group?
5. What halogen is added to toothpaste?
6. Is color a physical property?
7. How many atoms are in an oxygen molecule?
8. What common substance has a formula of  $C_9H_8O_4$ ?
9. Wood burns. Is that a physical or a chemical property?
10. Is seawater a mixture?
11. What is the chemical name for NaCl?
12. What is the common name for NaCl?
13. Is  $H_2O$  a structural formula?
14. Write the name for  $BCl_3$ .
15. Write the formula for dinitrogen monoxide.
16. The type of bond where electrons are shared is called   ?  .
17. Electrons are   ?   or   ?   in an ionic bond.
18. What is the name for the  $NH_4$  ion?
19. Name an element that loses 2 electrons when bonding.
20. The table on p145 shows the electrons in each shell of an atom. How many total electrons does Ne have?

**Definitions- write the definitions for these terms on the answer sheet and be able to explain them next week from memory in your own words .**

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|------------------------|---------------------|
| 1. valence             | 6. chemical formula |
| 2. physical properties | 7. chemical bond    |
| 3. chemical properties | 8. covalent bond    |
| 4. density             | 9. ionic bond       |
| 5. mixture             |                     |