Chapter 12 Basics of Chemistry

Name:

Instructions: Answer each question, using information from your readings and lessons as a guide.

1. What makes one element different from another element? *(They are different because the structure of their atoms, or atomic structure, is different.)*

2. How are molecules made? *(Molecules are made by combining atoms.)*

3. It is possible for a substance to exist in all \_\_\_\_*(three)\_\_\_* forms of matter. Give an example: *(Water can exist as a liquid, a solid [ice], and a gas [vapor]).*

4. What are two examples of a physical change?

*(Solid ice melts into water)*

*(Application of temporary haircolor or nail polish)*

5. What is oxidation? *(The chemical reaction that causes a chemical change in the substances)*

6. List two examples of a chemical change:

*(The oxidation of haircolor)*

*(Wood turning into charcoal after it has burned)*

7. What is an example of an oxidizing agent? *(Hydrogen peroxide)*

8. What is an example of a reducing agent? *(Oxidation haircolor mixed with hydrogen peroxide)*

9. Define each of the following terms:

|  |  |
| --- | --- |
| a. Oxidizing | *(Adding oxygen to a substance)* |
| b. Reducing | *(Subtracting oxygen from a substance)* |
| c. Reduction | *(Chemical reaction caused when oxygen is subtracted from a substance)*  |

10. What are some examples of a pure substance? *(Oxygen, distilled water, atoms, elements, salt, water )*

11. Give two examples of a suspension:

*(Oil and vinegar salad dressing)*

(*Calamine lotion)*

*(Nail polish)*

12. Why do traditional bar soaps often make people’s hands feel itchy after use?

*(Bar soaps are highly alkaline and combine with the minerals in hard water to form an insoluble film that coats skin and can cause hands to feel dry, itchy, and irritated.)*

13. What are two examples of a water-in-oil emulsion? *(Cold cream and styling creams. Foot balms are another example given in the text.)*

14. What does the pH scale measure? *(The acidity and alkalinity of a substance)*

15. What is an example of an acid that may be used in the salon? *(alpha hydroxy acid)*

16. Discuss one way to neutralize alkaline callous-softener residues that may be left on a client’s skin after rinsing. *(Use a liquid soap because it is slightly acidic)*