CHAPTER 3 PRACTICE QUESTIONS

Directions: Review what you just learned in this chapter and test your comprehension with these practice questions. Answers can be found directly after the questions.

Periodic Table

1. Classify each of the following elements as metal, nonmetal, or metalloid:

a. chlorine

b. calcium

c. arsenic

d. hydrogen

2. Elements that are located in the *d*-block (groups 3–12) of the periodic table are called:

A) alkali metals

B) alkaline earth metals

C) metalloids

D) transition metals

3. Which of the following elements is a poor conductor of electricity?

A) K

B) S

C) Ca

D) Al

Atomic Properties

4. Reading from left to right across the periodic table, elements that are located in the same period:

A) decrease in atomic mass

B) increase in atomic number

C) exhibit similar reactivity

D) decrease in reactivity

5. The element in Period 3 that has the highest ionization energy is:

A) an alkali metal

B) an alkaline earth metal

C) a halogen

D) a noble gas

6. Which element, Na or K, is more reactive and why?

A) Na is more reactive because it has a smaller atomic radius and higher ionization energy.

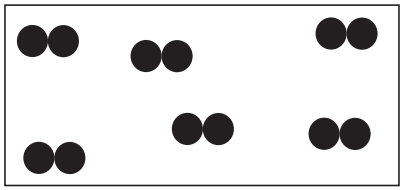
B) Na is more reactive because it has a larger atomic radius and a lower ionization energy.

C) K is more reactive because it has a smaller atomic radius and a higher ionization energy.

D) K is more reactive because it has a larger atomic radius and a lower ionization energy.

Types of Matter

7. In which state of matter can the volume change based on outside conditions?



A) Solid

B) Liquid

C) Gas

Chemical vs. Physical Properties

8. Which element would have chemical properties similar to those of Bromine?

A) Iodine

B) Krypton

C) Boron

D) Selenium

9. Which of the following examples is the result of a physical change?

A) The burning of propane in a gas grill

B) The rusting of an iron nail

C) The melting of an ice cube in a glass of soda

D) The baking of cookies inside an oven

Separation Techniques

10. Paper chromatography is a method for physically separating the components of a mixture based on the fact that:

A) the components to be separated have different densities

B) the components to be separated have different tendencies to stick to the paper

C) the components to be separated have different phases of matter

D) the components to be separated have different boiling points