

DIRECTIONS

Choose the best answer choice for each of the following questions.

1. A covalent bond forms when two nonmetals share electrons. According to this definition, which of the following is an example of a covalent bond?



2. A student is trying to determine if a particular element is a metal. The element is likely to be a metal if it is _____.

f. malleable

g. liquid

h. toxic

j. hot

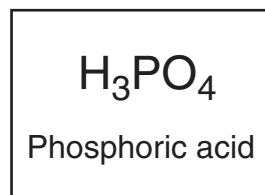
3. Which element is an important nutrient for humans?

a. mercury

b. calcium

c. helium

d. gold



4. According to this chemical formula, all of the following elements are found in phosphoric acid EXCEPT _____.

f. hydrogen

g. oxygen

h. phosphorus

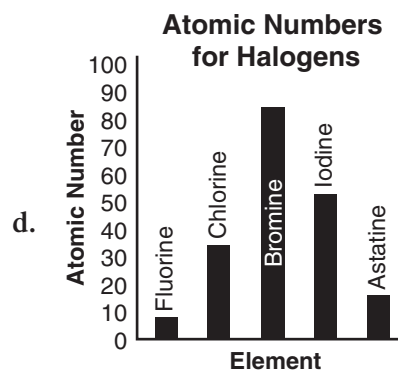
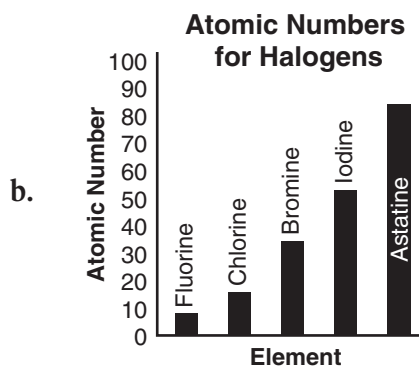
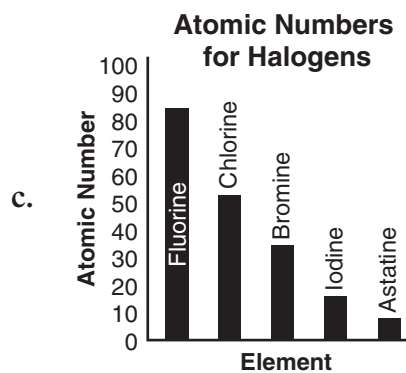
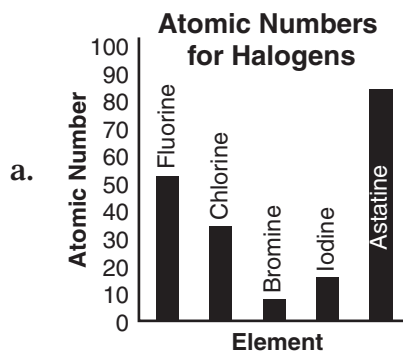
j. potassium



The Halogens

Element	Atomic Number
Fluorine	9
Chlorine	17
Bromine	35
Iodine	53
Astatine	85

5. The chart shows the atomic numbers for the elements in the halogen family of elements. Which of these graphs best represents these data?

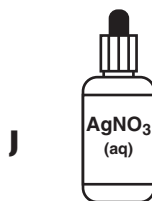
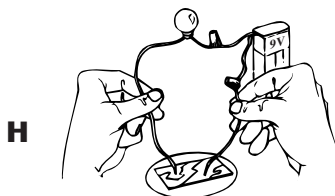


DIRECTIONS

Read each question. Then, on your answer sheet, mark the answer choice that you think is best.

- 1** Which of the following gives the best definition of *allotropes*?
- A** Allotropes are compounds containing the element aluminum.
 - B** Allotropes are elements that conduct electricity.
 - C** Allotropes are different structural forms of the same element.
 - D** Allotropes are two atoms of the same element with different atomic numbers.
- 2** Which element listed below is considered an alkaline earth metal?
- F** oxygen
 - G** magnesium
 - H** chlorine
 - J** hydrogen
- 3** Metals are ductile. This allows them to
- A** be pulled into long wires
 - B** conduct electricity
 - C** melt quickly
 - D** be used to cover floors

- 4** A chemist is trying to identify elements. Which instrument could be used to test a sample of an element for conductivity?



- 5** A student measures the mass of a sample of nickel during science class. She probably recorded her answer in
- A** liters
 - B** tons
 - C** inches
 - D** grams

Directions: This chart gives the results of an experiment testing physical and chemical properties of elements. Use the information in the chart to answer Numbers 6–7 below.

Test	Element 1	Element 2	Element 3	Element 4
Conductivity	Yes	Yes	No	No
Physical Appearance	Shiny solid stored in oil	Shiny solid	Colorless Gas	Yellow Gas
Reactivity	Very	Reacts with nonmetals	Unreactive	Reacts with alkali metals

6 A fifth element also was tested. It did not conduct electricity, it reacted with alkali metals, and it was a gas. This element behaved most similarly to

- F** Element 1
- G** Element 2
- H** Element 3
- J** Element 4

7 A sixth element also was tested. It conducted electricity, it reacted with nonmetals, and it was a solid. This element behaved most similarly to

- F** Element 1
- G** Element 2
- H** Element 3
- J** Element 4

Directions: Read Number 8 below. Then, on your answer sheet, write your answer in complete sentences.

8 Elements in Group 18 of the periodic table are sometimes called inert gases. Explain why they received this name and what it is about their atomic structure that leads to this.

