Elements and the Periodic Table

Multiple Choice

Write the letter of the correct answer on the line at the left.

___ 1. Which particles are found in the nucleus of an atom?
   a. electrons and protons
   b. neutrons and protons
   c. neutrons and electrons

___ 2. The number of protons in an atom is the element’s
   a. chemical symbol.
   b. group.
   c. atomic number.

___ 3. Dmitri Mendeleev created the first
   a. chemical reaction.
   b. periodic table.
   c. semiconductor.

___ 4. A row of elements in the periodic table is called a
   a. period.
   b. group.
   c. family.

___ 5. A mixture of free electrons and atomic nuclei is called
   a. plasma.
   b. a metal.
   c. a noble gas.

___ 6. If an object can be pulled into a long wire, then the object is
   a. ductile.
   b. reactive.
   c. easy to break.

___ 7. When metal atoms react with the atoms of other elements, the metal atoms
   a. gain neutrons.
   b. share protons.
   c. lose electrons.

___ 8. Scientists make elements heavier than uranium in machines called
   a. semiconductors.
   b. particle accelerators.
   c. lasers.
Elements and the Periodic Table • Adapted Test

9. Which is a property of nonmetals?
   a. good conductor
   b. malleable
   c. not shiny

10. Elements that have some properties of both metals and nonmetals are called
    a. metalloids.
    b. noble gases.
    c. alkali metals.

Completion
Read each word in the box. In each sentence below, fill in the correct word or words. Not all of the words will be used.

alkali metals      atomic mass      halogens
isotopes              radioactivity     noble gases

11. Atoms with the same number of protons but different numbers of neutrons are called ______________________.

12. The average mass of all the isotopes of an element is called the element’s ______________________.

13. The most reactive group of metals in the periodic table is the ______________________.

14. The most reactive group of nonmetals whose atoms gain or share one electron in chemical reactions are the ______________________.

15. The spontaneous emission of radiation by an unstable atomic nucleus is called ______________________.

True or False
If a statement is true, write true. If it is false, write false.

16. In an atom, the number of protons is equal to the number of electrons.

17. It is impossible to predict the properties of any element by its position in the periodic table.
18. Heat and electricity can easily flow through metals.
19. Nonmetals can be hammered into thin sheets.
20. Tracers can be used to follow the steps of a chemical reaction.

Using Science Skills
Use the diagram below to answer questions 21, 22, and 23.

_____ 21. **Inferring**  The part of an atom labeled B is a(an)
   a. proton.
   b. neutron.
   c. electron.

_____ 22. **Applying Concepts**  Which part of an atom can be found at different energy levels?
   a. A
   b. B
   c. C

_____ 23. **Applying Concepts**  Which parts of an atom make up nearly all the mass of an atom?
   a. A + C
   b. A + B
   c. B + C
Using Science Skills

Use the diagram below to answer questions 24 and 25.

24. Inferring  The chemical symbol for phosphorus is
   a. 15.
   b. P.
   c. Sb.

25. Applying Concepts  The elements of this group have properties that
   a. are the same.
   b. change as you move down the column.
   c. cannot be predicted.