

# 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 one or two letter representation of an element is a(an)  
a. chemical symbol.  
b. atomic number.  
c. energy level.
- \_\_\_\_\_ 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.

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- \_\_\_\_\_ 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. semimetals.  
 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 ability of a substance to spontaneously give off radiation is called \_\_\_\_\_.

**True or False**

*If a statement is true, write true. If it is false, write false.*

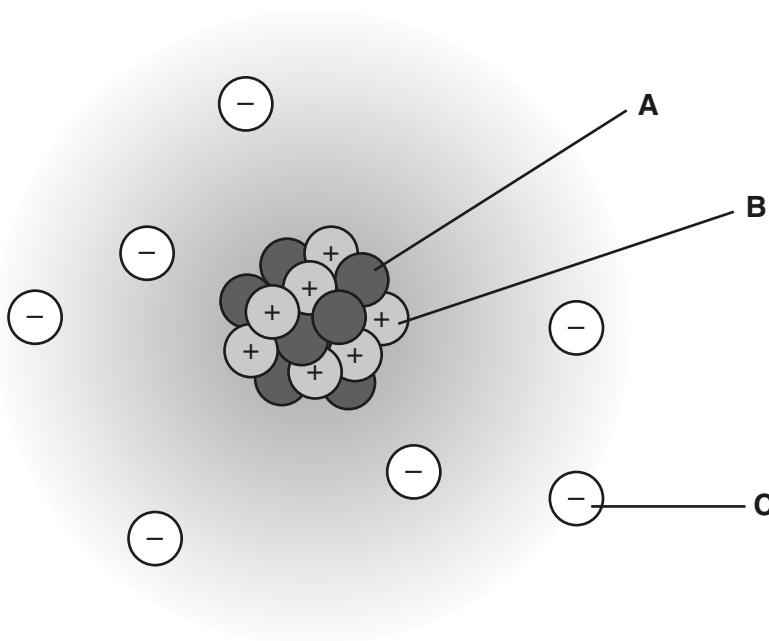
- \_\_\_\_\_ 16. In an atom, the number of protons is equal to the number of electrons.
- \_\_\_\_\_ 17. It is impossible to predict the properties of any element by its position in the periodic table.

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- \_\_\_\_\_ 18. Heat and electric current can easily flow through metals.
- \_\_\_\_\_ 19. Nonmetals can be hammered into thin sheets.
- \_\_\_\_\_ 20. Radioactive 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 has the least mass?  
 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

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**Using Science Skills**

Use the diagram below to answer questions 24 and 25.

15 7 <b>N</b> Nitrogen
15 <b>P</b> Phosphorus
33 <b>As</b> Arsenic
51 <b>Sb</b> Antimony
83 <b>Bi</b> Bismuth

- \_\_\_\_\_ 24. **Inferring** The chemical symbol for phosphorus is
- 15.
  - P.
  - Sb.
- \_\_\_\_\_ 25. **Applying Concepts** The elements shown in the diagram are
- part of the same group.
  - part of the same period.
  - not related.