

Key
More
tightly**Multiple Choice**

Identify the letter of the choice that best completes the statement or answers the question.

D 1. Each row in the periodic table ends with a _____.

- a. metal
b. nonmetal
c. metalloid
d. noble gas

B 2. In going from left to right in any given row in the periodic table, the size of atoms generally _____.

- a. increases
b. decreases
c. stays the same
d. changes randomly

A 3. Compared to the neutral atom from which it is derived, a negative ion is _____.

- a. always larger
b. always smaller
c. larger in some cases and smaller in others
d. the same size

(- ion)

B 4. A metallic ion is _____ its corresponding atom. (+ ion)

- a. larger than
b. smaller than
c. the same size as
d. impossible to compare with

A 5. Bromine is a typical nonmetal. A bromide ion is _____ a bromine atom. (- ion)

- a. larger than
b. smaller than
c. the same size as
d. impossible to compare with

B 6. The most unreactive group of elements is the _____.

- a. halogens
b. noble gases
c. alkali metals
d. transition elements

Matching

Match each item with the correct statement below.

- a. alkali metal 1
b. alkaline earth metal 2
c. halogen 7

C 7. Fluorine, bromine, or iodineA 8. An element found in Group 1 of the periodic tableB 9. In compounds, has an oxidation number of 2+A 10. Sodium or cesiumC 11. In compounds, has an oxidation number of 1-C 12. An element found in Group 17B 13. Magnesium or bariumA 14. In compounds, has an oxidation number of 1+B 15. An element found in Group 2B 16. Strontium, which is identified by the red color of fireworksC 17. Astatine is the largest of this family

Short Answer

18. What property did Mendeleev use to put elements in the same column on his periodic table?

increasing atomic mass, similar props

19. What do elements in the same period of the periodic table have in common?

same # energy levels

20. What do elements in the same groups of the periodic table have in common?

same # valence e⁻

21. Tell if each of the following elements in a metal, metalloid, or nonmetal.

Calcium Silicon Sulfur Bromine Chromium Arsenic Aluminum
Metal metalloid NON NON Metal Metalloid Metal

22. List 3 properties of metals

shiny, ductile, malleable, good conductors, solid*, hard

23. List 3 properties of nonmetals

brittle, poor conductors, gas*

24. Complete the table below

Element name	Group number	Metal, metalloid or nonmetal	Number of outer electrons	Charge of ion
Sodium	1A	metal	1	+1
Calcium	2A	metal	2	+2
Aluminum	3A	metal	3	+3
Nitrogen	5A	non	5	-3
Sulfur	6A	non	6	-2
Fluorine	7A	non	7	-1
Neon	8A	non	8	0

25. Why do metals have less attraction for their outer electrons than nonmetals?

their outer energy level is far from filled so they'd rather give them

26. Tell which element atom is larger and why.

Magnesium and Phosphorus

↓p⁺ & ↓e⁻ so attraction ↓ metals have lower electron affinity. that is, they don't attract e⁻ as much so they are larger (Mg)

Chlorine and Iodine

Iodine has more layers / E levels of e⁻ so larger

27. Why are positive ions smaller than the atoms they were created from?

pos ions have fewer e⁻ so the nucleus can more tightly hold

28. Why are negative ions larger than the atoms they were created from?

neg ions have more e⁻ & the nucleus can't hold onto the

COMPLETE THE FOLLOWING CHART

extra e⁻ as tightly

Name	Symbol	# Protons	# Neutrons	# Electrons	Atomic Number	Atomic Mass
Carbon	C	6	6	6	6	12
Zinc	Zn	30	35	30	30	65
Chlorine	Cl	17	18	17	17	35
Gold	Au	79	118	79	79	197
Helium	He	2	2	2	2	4