

Chemistry
EOC Review 2: Periodic Table

1. Which three groups of the Periodic Table contain the most elements classified as metalloids (semimetals)?
 - a. 1, 2, and 13
 - b. 2, 13, and 14
 - c. 14, 15, and 16
 - d. 16, 17, and 18
2. Which element has the highest first ionization energy?
 - a. sodium
 - b. aluminum
 - c. calcium
 - d. phosphorus
3. Which compound forms a colored aqueous solution?
 - a. CaCl_2
 - b. CrCl_3
 - c. NaOH
 - d. KBr
4. When a metal atom combines with a nonmetal atom, the nonmetal atom will
 - a. lose electrons and decrease in size
 - b. lose electrons and increase in size
 - c. gain electrons and decrease in size
 - d. gain electrons and increase in size
5. According to Reference Table S, which of the following elements has the smallest atomic radius?
 - a. nickel
 - b. cobalt
 - c. calcium
 - d. potassium
6. Which element in Group 15 has the strongest metallic character?
 - a. Bi
 - b. As
 - c. P
 - d. N
7. Which halogens are gases at STP?
 - a. chlorine and fluorine
 - b. chlorine and bromine
 - c. iodine and fluorine
 - d. iodine and bromine
8. When combining with nonmetallic atoms, metallic atoms generally will
 - a. lose electrons and form negative ions
 - b. lose electrons and form positive ions
 - c. gain electrons and form negative ions
 - d. gain electrons and form positive ions
9. Which set of elements contains a metalloid?

- a. K, Mn, As, Ar
- b. Li, Mg, Ca, Kr
- c. Ba, Ag, Sn, Xe
- d. Fr, F, O, Rn

10. Atoms of elements in a group on the Periodic Table have similar chemical properties. This similarity is most

closely related to the atoms'

- a. number of principal energy levels
- b. number of valence electrons
- c. atomic numbers
- d. atomic masses

11. As atoms of elements in Group 16 are considered in order from top to bottom, the electronegativity of each successive element

- a. decreases
- b. increases
- c. remains the same

12. The first ionization energy of an element is 736 kJ per mole of atoms. An atom of this element in the ground state has a total of how many valence electrons?

- a. 1
- b. 2
- c. 3
- d. 4

13. An atom of which of the following elements has the greatest ability to attract electrons?

- a. silicon
- b. sulfur
- c. nitrogen
- d. chlorine

14. At STP, which substance is the best conductor of electricity?

- a. nitrogen
- b. neon
- c. sulfur
- d. silver

15. Which metal is obtained commercially by the electrolysis of salt?

- a. Zn
- b. K
- c. Fe
- d. Ag

16. Which element can be found in nature in the free (uncombined) state?

- a. Ca
- b. Ba
- c. Au
- d. Al