

Periodic Table Study Guide

Name Key

Match the following:

- | | |
|----------------------------------|--|
| 1. <u>D</u> Metal | a. positively charged ion |
| 2. <u>B</u> Halogen | b. any nonmetal found in group 7A. |
| 3. <u>C</u> Ionization energy | c. the energy needed to remove an electron from an atom in gaseous state |
| 4. <u>H</u> Alkaline earth metal | d. good conductor of heat and electric current |
| 5. <u>G</u> noble gas | e. an element whose highest occupied s and d sublevels contain electrons |
| 6. <u>A</u> Cation | f. the tendency of an atom to attract electrons |
| 7. <u>F</u> Electron affinity | g. an element in which the highest occupied s & p sublevels are filled |
| 8. <u>E</u> Transition metal | h. an element in group 2A |

9. D In the periodic table, there is a periodic pattern in the physical and chemical properties of elements when they are arranged in order of increasing

- a. atomic mass b. electron affinity c. atomic radius d. atomic number

10. B Which of the following elements is a metalloid

- a. As b. Se c. Br d. Kr

11. A When the strontium atom loses two electrons to form a Sr^{2+} ion, the electrons are lost from

- a. 5 s orbital b. 5 p orbital c. 3 d orbital d. 4 f orbital e. 1 s orbital

12. B The element iodine is a

- a. alkali metal b. halogen c. transition metal d. metalloid

13. C The subatomic particle that plays the greatest role in determining the physical and chemical properties of an element

is the

- a. proton b. neutron c. electron d. positron

14. D Which of the following atoms would you expect to have the largest atomic radius?

- a. I b. K c. Ca d. Rb

15. A From left to right across the second period of the periodic table

- a. first ionization energy increases b. atomic radii increases
c. electronegativity increases d. atomic mass decreases

16. D For which element would you expect a large jump between the first and second ionization energies?

- a. F b. Ca c. Fe d. Na

17. C Electron affinity

- a. generally decreases from left to right across a period
b. is the energy change that accompanies the loss of an electron in gaseous atoms
c. generally decreases from top to bottom within a group
d. is generally higher for metals than nonmetals

18. D Atomic size generally

- a. increases from left to right across a period
b. decreases from top to bottom within a group
c. remains constant in a period
d. decreases from left to right across a period

19. B Of the following atoms, which one has the smallest first ionization energy

- a. boron b. aluminum c. nitrogen d. silicon

20. B The alkali metals do not include

- a. Li b. Ca c. Na d. Rb

21. D Rank the following elements in order of decreasing atomic radius:

- a. Mg, Na, P, Si, Ar b. Ar, Si, P, Na, Mg c. Si, P, Ar, Na, Mg d. Na, Mg, Si, P, Ar