

## Assignment 4.5

Choose the correct answer for each question- complete the Why box if there is one. ONLY evens due day of test. Odd answers will be posted on Mrs. Young's website.

1. Of the following elements, which one would have the largest electronegativity energy?

- A. Fluorine (F, atomic #9)
- B. Bromine (Br, atomic #35)
- C. Iodine (I, atomic #53)
- D. Chlorine (Cl, atomic #17)

WHY? TOP of group can attract  $e^-$  better due to fewer shells blocking the nucleus

2. The elements with the largest atomic radii are found in the:

- A. upper right-hand corner of the periodic table
- B. upper left-hand corner of the periodic table
- C. lower left-hand corner of the periodic table
- D. lower right-hand corner of the periodic table

3. The most active metals are located in the:

- A. lower left hand corner of the periodic table
- B. upper right hand corner of the periodic table
- C. lower right hand corner of the periodic table
- D. upper left hand corner of the periodic table

WHY? Video Cs exploded container (lowest electronegativity values)

4. Anions have a \_\_\_\_\_ charge and are \_\_\_\_\_ than the atoms from which they formed.

- A. negative/larger
- B. negative/smaller
- C. positive/smaller
- D. positive/larger

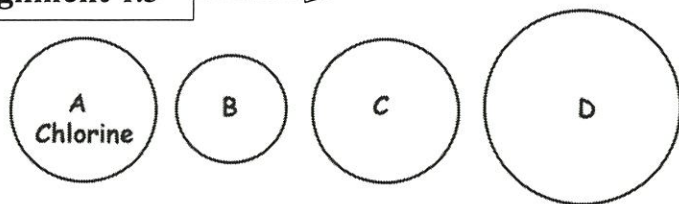
WHY?

5. The least electronegative elements are the:

- A. Metalloids
- B. Noble gases
- C. Alkali metals
- D. Halogens

furthest left (can check table)

### Assignment 4.5

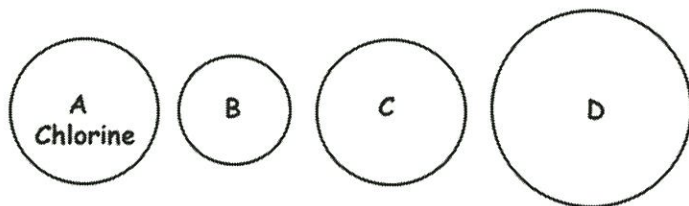


6. Given the representation of a chlorine atom, which circle might represent an atom of bromine?

- A. Circle B
- B. Circle D
- C. Circle C
- D. None of these

7. The energy required to remove an electron from an atom is known as:

- A. electron affinity
- B. electronegativity
- C. ionization energy
- D. radioactivity



8. Given the representation of a chlorine atom, which circle might a chloride ion, Cl<sup>-</sup>?

- A. Circle B
- B. Circle D
- C. Circle C
- D. None of these

WHY?

9. Of the following elements, which one would have the smallest radius?

- A. Bromine (Br, atomic #35)
- B. Iodine (I, atomic #53)
- C. Chlorine (Cl, atomic #17)
- D. Fluorine (F, atomic #9)



## Assignment 4.5

10. As one moves from left to right ( → ) within a period across the periodic table, the atomic radius of the elements encountered tends to:

- A. stay the same
- B. decrease
- C. increase

WHY?

11. A horizontal row ( → ) of elements on the periodic table may also be referred to as a:

- family
- group
- period

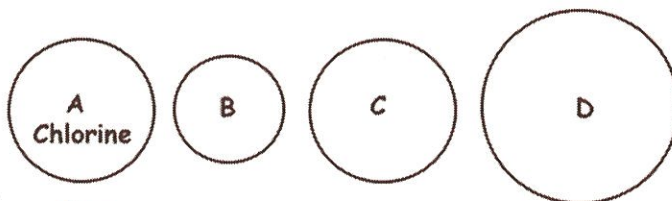
12. As one moves from left to right ( → ) within a period across the periodic table, the electronegativity of the elements encountered tends to:

- A. stay the same
- B. decrease
- C. Increase

13. Given the representation of a chlorine atom, which circle might represent an atom of sulfur?

- B. Circle D
- C. Circle B
- D. Circle C

WHY?



← Cl  
larger (table) or trend

14. As one moves from down ( ↓ ) a group on the periodic table, the electronegativity of the elements encountered tends to:

- A. Decrease
- B. stay the same
- C. Increase

15. Of the following elements, which one would have the smallest radius?

- A. Lithium (Li, atomic #3)
- B. Boron (B, atomic #5)
- C. Neon (Ne, atomic #10)
- D. Nitrogen (N, atomic #7)

Li B N Ne  
←  
(tables) across a period nuclear charge ↑ makes radius smaller



**Assignment 4.5**

16. Of the following elements, which one would have the largest radius?

- F. Nitrogen (N, atomic #7)
- G. Boron (B, atomic #5)
- H. Neon (Ne, atomic #10)
- I. Lithium (Li, atomic #3)

WHY?

16. As one moves from left to right ( → ) within a period across the periodic table, the ionization energy of the elements encountered tends to:

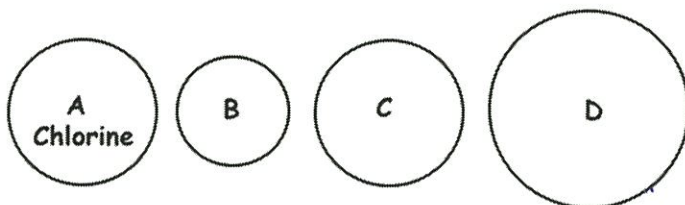
- A. decrease
- B. increase
- C. stay the same

(table ↓)

17. Generally speaking, the group of elements with the highest first ionization energy is:

- A. Group 1
- B. Group 17
- C. Group 16

WHY? furthest right = smallest radius &amp; hardest to remove (most energy)

18. Given the representation of a chlorine atom, which circle might represent an atom of bromine?

- A. Circle D
- B. None of these
- C. Circle B
- D. Circle C

Cl  
Br

19. As one moves from down ( ↓ ) a group on the periodic table, the ionization energy of the elements encountered tends to:

- A. increase
- B. decrease
- C. stay the same

WHY? more shells = less energy to remove

20. Of the following elements, which one would have the smallest ionization energy?

- A. Neon (Ne, atomic #10)
- B. Boron (B, atomic #5)
- C. Lithium (Li, atomic #3)
- D. Nitrogen (N, atomic #7)

## Assignment 4.5

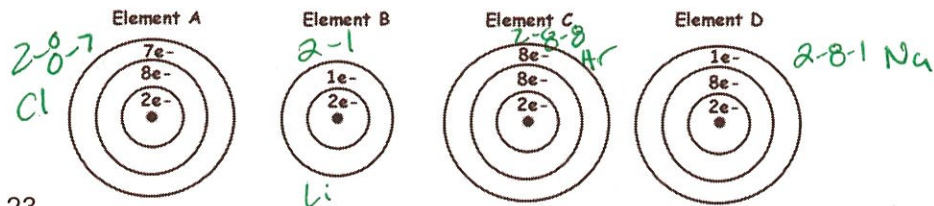
21. Cations have a + charge and are \_\_\_\_\_ than the atoms from which they formed.

- A. positive/smaller
- B. negative/larger
- C. positive/larger
- D. negative/smaller

WHY?  $2-8-1 \text{ Na} \rightarrow \text{smaller}$   
 $2-8 \text{ Na}^+ \rightarrow \text{smaller}$

22. Of the following elements, which one would have the largest radius?

- A. Cesium (Cs, atomic #55)
- B. Potassium (K, atomic #19)
- C. Hydrogen (H, atomic #1)
- D. Sodium (Na, atomic #11)



- A. Element C
- B. Element A
- C. Element B
- D. Element D

WHY? lookup values  
OR  
 Furthest left & lowest on table (trends)

24. The elements with the smallest atomic radii are found in the:

- A. lower left-hand corner of the periodic table
- B. lower right-hand corner of the periodic table
- C. upper right-hand corner of the periodic table
- D. upper left-hand corner of the periodic table

25. A vertical column ( ↓ ) of elements on the periodic table may also be referred to as a: (select 2)

- group
- period
- family