

6 THE PERIODIC TABLE

Chapter Quiz

Fill in the word(s) that will make each statement true.

1. In the modern periodic table, when elements are arranged according to their atomic 1, there is a periodic repetition of properties. 1. number 6.1
2. There are 2 periods in the periodic table. 2. 7 6.1
3. The elements in any 3 in the periodic table have similar physical and chemical properties. 3. family or column, or group
4. Oxygen and sulfur, Group 6A elements, have 4 electrons in their highest occupied energy level. 4. 6 (5²p⁴) 6.2
5. For the inner transition elements, electrons are added to an *f* sublevel with a principal energy level that is 5 than the period number. 5. 2 less 6.2

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Classify each of these statements as always true, *AT*; sometimes true, *ST*; or never true, *NT*.

- | | |
|---|-----|
| <u>ST</u> 6. The atomic radius of an element in period 3 is larger than the atomic radius of an element in period 2. | 6.3 |
| <u>AT</u> 7. For Group 3A elements, there is a relatively small increase in ionization energy between the second and third ionization energies. | 6.3 |
| <u>NT</u> 8. Anions are smaller than the neutral atoms from which they are formed. | 6.3 |
| <u>AT</u> 9. Atoms with low electronegativity values tend to form positive ions. | 6.3 |
| <u>NT</u> 10. As a group, alkali metals have the highest electronegativities. | 6.3 |

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Vocabulary Review

Match the correct vocabulary term to each numbered statement. Write the letter of the correct term on the line.

- | Column A | Column B |
|---|----------------------------|
| <u>A</u> 1. The highest occupied <i>s</i> and <i>p</i> sublevels are partially filled. | a. representative elements |
| <u>N</u> 2. The highest occupied <i>s</i> sublevel and a nearby <i>d</i> sublevel contain electrons. | b. electronegativity |
| <u>M</u> 3. metals having only 2 electrons in the highest occupied energy level | c. atomic radius |
| <u>C</u> 4. one half the distance between the nuclei of two atoms of the same element when the atoms are joined | d. metals |
| <u>K</u> 5. decreases for cations and anions from left to right across a period | e. ionization energy |
| <u>B</u> 6. measures the ability of an atom to attract electrons when the atom is in a compound | f. cation |
| <u>L</u> 7. an atom or group of atoms that has a positive or negative charge | g. noble gases |
| <u>G</u> 8. elements in which the highest occupied <i>s</i> and <i>p</i> sublevels are filled | h. alkali metals |
| <u>O</u> 9. nonmetals of Group 7A | i. inner transition metals |
| <u>E</u> 10. The highest occupied <i>s</i> sublevel and a nearby <i>f</i> sublevel contain electrons. | j. nonmetals |
| <u>F</u> 11. energy required to remove an electron from an atom | k. ionic radius |
| <u>H</u> 12. positively charged ion | l. ion |
| <u>D</u> 13. Group 1A elements | m. Group 2A |
| <u>P</u> 14. good conductors of heat and electric current | n. transition metal |
| <u>J</u> 15. negatively charged ion | o. halogens |
| <u>T</u> 16. poor conductors of heat and electric current | p. anion |