

Name: _____

Period: _____

Ch. 4/5 Homework Packet

HW #1

Properties of Subatomic Particles (pages 108–109)

- What are three subatomic particles?
a. _____ b. _____ c. _____
- Circle the letter that identifies a subatomic particle with a positive charge.
a. nucleus b. proton
c. neutron d. electron

Comparing Subatomic Particles (pages 109–110)

- Circle the letters of properties that vary among subatomic particles.
a. color b. mass
c. charge d. location in the atom
- Circle the letter of the expression that accurately compares the masses of neutrons and protons.
a. mass of 1 neutron = mass of 1 proton
b. mass of 2000 neutrons = mass of 1 proton
c. mass of 1 electron = mass of 1 proton
d. mass of 1 neutron = mass of 1 electron

Atomic Number and Mass Number (page 110)

- Is the following sentence true or false? Two atoms of the same element can have different numbers of protons. _____
- What is an atomic number? _____

- Circle the letters that identify quantities that are always equal to an element's atomic number.
a. number of nuclei
b. number of protons
c. number of neutrons
d. number of electrons

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- Complete the equation in the table below.

Number of neutrons = _____ - _____

Ions and Isotopes

HW #2

Isotopes (page 112)

1. Every atom of a given element has the same number of _____ and _____.
2. Every atom of a given element does not have the same number of _____.
3. What are isotopes? _____

4. All oxygen atoms have 8 protons. Circle the letter of the number of neutrons in an atom of oxygen-18.
 - a. 8
 - b. 9
 - c. 10
 - d. 18
5. Is the following sentence true or false? Isotopes of oxygen have different chemical properties. _____
6. Water that contains hydrogen-2 atoms instead of hydrogen-1 atoms is called _____.

Ions (pages 159–161)

7. Some elements achieve stable electron configurations through the transfer of _____ between atoms.
8. By losing one valence electron, a sodium atom achieves the same electron arrangement as an atom of _____.
9. Circle the letter that states the result of a sodium atom transferring an electron to a chlorine atom.
 - a. Each atom ends up with a more stable electron arrangement.
 - b. The sodium atom becomes more stable, but the chlorine atom becomes less stable.
 - c. The chlorine atom becomes more stable, but the sodium atom becomes less stable.
 - d. Each atom ends up with a less stable electron arrangement.
10. Is the following sentence true or false? An ion is an atom that has a net positive or negative electric charge. _____
11. An ion with a negative charge is called a(n) _____.

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Periodic Table

HW #3 (2 pages)

Valence Electrons (page 139)

1. An electron that is in the highest occupied energy level of an atom is a(n) _____ electron.
2. Elements within a group have the _____ number of valence electrons.

The Alkali Metals (page 140)

3. The reactivity of alkali metals _____ from the top of Group 1A to the bottom. Circle the correct answer.

decreases

increases

stays the same

The Alkaline Earth Metals (page 141)

Find and match two properties to each element listed.

Alkaline Earth Metal	Property
_____ 4. magnesium	a. Helps build strong teeth and bones
_____ 5. calcium	b. Helps plants produce sugar
	c. Is used to make lightweight bicycle frames
	d. Is the main ingredient in limestone

The Boron Family (page 142)

6. List the four metals in Group 3A.
 - a. Aluminum
 - b. _____
 - c. _____
 - d. _____

The Carbon Family (page 142)

7. List the two metalloids in Group 4A.
 - a. Silicon
 - b. _____
8. Except for water, most of the compounds in your body contain _____.

The Nitrogen Family (page 143)

9. List the nonmetals in Group 5A.
 - a. Nitrogen
 - b. _____
10. Name two elements in the nitrogen family that are contained in fertilizer.
 - a. Nitrogen
 - b. _____

The Oxygen Family (page 143)

11. List the nonmetals in Group 6A.
 a. Oxygen b. _____ c. _____
12. Name the most abundant element in Earth's crust. _____

The Halogens (page 144)

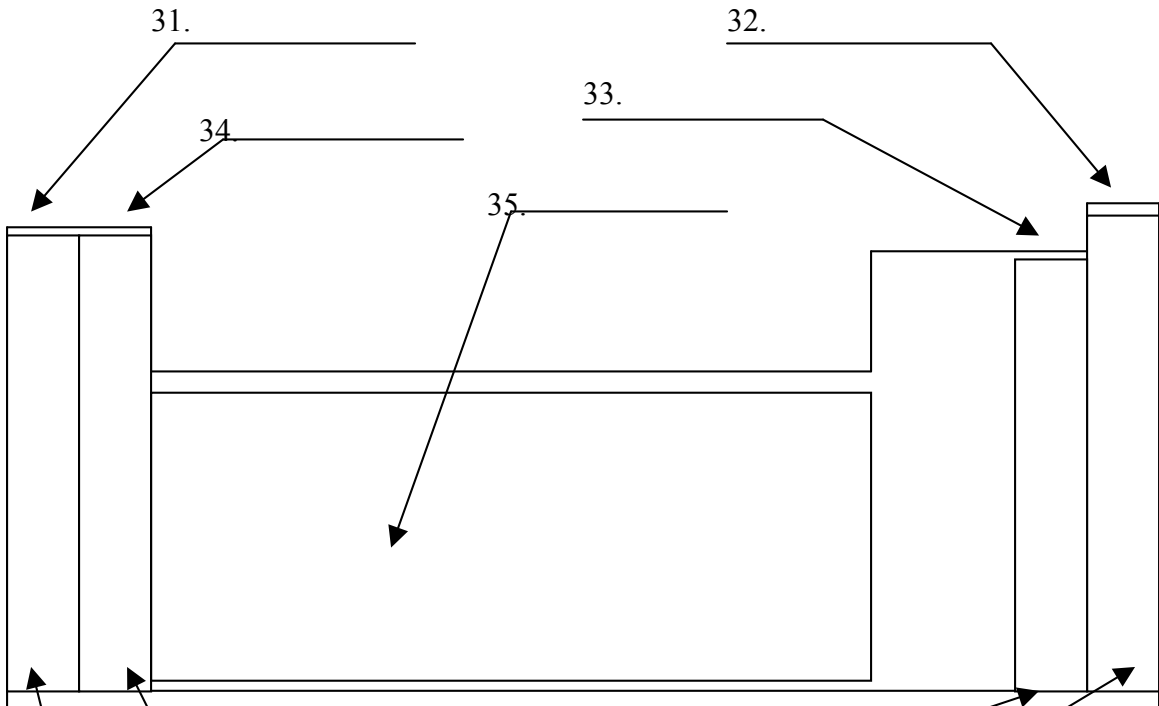
13. List the four nonmetals in Group 7A.
 a. Fluorine b. _____
 c. _____ d. _____
14. Halogens have similar _____ properties but different _____ properties. Use the words in the box to fill in the blanks.

chemical	electric
physical	reactive

The Noble Gases (page 145)

15. Name three characteristics of noble gases.
 a. Colorless b. _____ c. _____

Label the following diagram of the Periodic Table
Word Bank: All words are used one time
Alkali Metal Alkali-Earth Metals Halogens Noble gases
Transitions metals.



36. ____ valence electrons
 valence electrons

37. ____

38. ____ valence electrons

39. ____ valence electrons

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