

Name: _____ Pd. _____ Date: _____

P: Unit 3 Review – The Periodic Table

Section 1: Organizing and Classifying Elements on the Periodic Table

Directions: Using your knowledge of the periodic table, elements, and their properties, answer the following questions.

Problems

1. The vertical columns on the periodic table are called _____.
2. The horizontal rows on the periodic table are called _____.
3. Most of the elements in the periodic table are classified as _____.
4. The elements that touch the zigzag line are classified as _____.
5. The elements in the far upper right corner are classified as _____.

**** For #6, 7, 9, and 10, also write the # of and electron configuration for the valence electrons****

6. Elements in the first group have one outer shell electron and are extremely reactive. They are called _____.
7. Elements in the second group have 2 outer shell electrons and are also very reactive. They are called _____.
8. Elements in groups 3 through 12 have many useful properties and are called _____.
9. Elements in group 17 are known as "salt formers". They are called _____.
10. Elements in group 18 are very unreactive. They are said to be "inert". We call these the _____.

****Skipped #11-12****

13. The number of protons in an atom is that element's _____ number.
14. The number of protons and neutrons in an atom is that atom's _____ number.
15. The ability of a material to be drawn into a thin wire is called _____.
16. The ability of a material to be pounded into thin sheets is called _____.

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17. Tell which element is in the following group/period location.

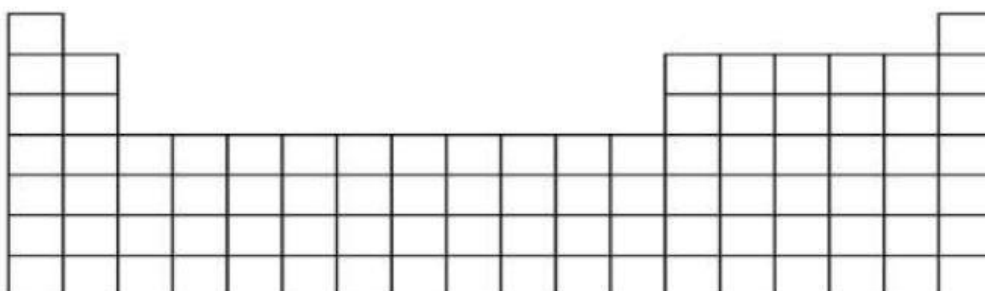
- a) _____ group 4, period 5
- b) _____ group 2, period 2
- c) _____ group 6, period 6
- d) _____ group 18, period 1
- e) _____ group 14, period 5
- f) _____ group 12, period 4
- g) _____ group 1, period 7
- h) _____ group 16, period 6
- i) _____ group 17, period 3
- j) _____ group 11, period 5
- k) _____ group 5, period 4
- l) _____ group 10, period 6
- m) _____ group 13, period 3
- n) _____ group 15, period 6

18. For each of the following, label the properties below as those of a *metal*, *nonmetal*, *metalloid*.

- a) _____ poor conductor of electricity
- b) _____ usually a solid at room temp
- c) _____ ductile
- d) _____ chlorine
- e) _____ semiconductor
- f) _____ silicon
- g) _____ malleable
- h) _____ usually a gas at room temp
- i) _____ cobalt
- j) _____ good conductor of heat
- k) _____ brittle
- l) _____ oxygen

Section 2: Periodic Trends

Directions: Summarize the periodic trends (atomic radius, electronegativity, ionization energy) on the blank table below. Make sure that you understand WHY these trends exist.



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Directions: Circle the correct answer.

Set 1

1.	Lowest electronegativity	Be	Ca	Sr	Ra
2.	Highest ionization energy	Cs	W	Pb	At
3.	Highest atomic radius	Na	Al	P	Cl
4.	Lowest atomic radius	V	Ga	Se	Br
5.	Highest ionization energy	Be	Mg	Sr	Ba
6.	Highest electronegativity	O	S	Se	Te
7.	Highest atomic radius	Nb	Al	Cl	Fr
8.	Lowest ionization energy	O	Al	Mn	Cs
9.	Highest atomic radius	K	V	Ga	Br
10.	Lowest ionization energy	Li	K	Cs	Fr
11.	Highest electronegativity	Cl	K	Te	Cs
12.	Highest atomic radius	Rb	Ag	Sn	Xe
13.	Highest electronegativity	Be	Mg	Sr	Ba
14.	Highest atomic radius	N	Si	Fe	Rb
15.	Lowest electronegativity	O	Ge	Mo	Ba
16.	Highest ionization energy	F	Cl	I	At
17.	Lowest atomic radius	N	As	Sb	Bi
18.	Lowest ionization energy	N	P	Sb	Bi

Set 2

1.	Highest atomic radius	Be	Ca	Sr	Ra
2.	Lowest atomic radius	Cs	W	Pb	At
3.	Highest electronegativity	Na	Al	P	Cl
4.	Lowest ionization energy	V	Ga	Se	Br
5.	Highest atomic radius	Be	Mg	Sr	Ba
6.	Highest electronegativity	O	S	Se	Te
7.	Highest ionization energy	Nb	Al	Cl	Fr
8.	Lowest ionization energy	O	Al	Mn	Cs
9.	Highest ionization energy	K	V	Ga	Br
10.	Lowest atomic radius	Li	K	Cs	Fr
11.	Highest electronegativity	Cl	K	Te	Cs
12.	Highest ionization energy	Rb	Ag	Sn	Xe
13.	Highest electronegativity	Be	Mg	Sr	Ba
14.	Highest atomic radius	N	Si	Fe	Rb
15.	Lowest atomic radius	O	Ge	Mo	Ba
16.	Highest ionization energy	F	Cl	I	At
17.	Lowest atomic radius	N	As	Sb	Bi
18.	Lowest ionization energy	N	P	Sb	Bi

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Section 3: Putting it all together

Directions: Using your notes and classwork, answer the following questions.

Periodic Table Parts & Trends

Describe the following t.

1. The atomic radius _____ across a period and _____ a group.
2. Ionization energy _____ across a period and _____ down a group.
3. Electronegativity _____ across a period and _____ down a group.
4. Identify the lowest EN: Li K Rb Cs
5. Identify the highest AR: Ca Ge Se Kr
6. Identify the lowest IE: Na Ga Se Br
7. The element that is an alkali in the 2nd period: _____
8. What is the group name of elements in the 17th group? _____
9. Identify the element in the noble gas group and in the 1st period: _____
10. On the periodic table below label the following parts: *noble gases, halogens, alkali metals, alkaline earth metals, metals, transition metals, inner transition metals, nonmetals, dividing line, group numbers & period numbers.* ****you should also know the s, p, and d blocks!****

