Name KEY

Periodic Table Review

Name	Symbol	Atomic Number	Metal, Nonmetal, or Metalloid	Electron Configuration	Valence Energy Level	# of Valence Electrons	Ion Formed	Electron Dot Diagram
Hydrogen	H	1	Nonmetal	$1s^1$	1	1	+1	H·
Helium	He	2	Nm	$1s^2$	1	2	Ø	He:
Neon	Ne	10	nm	$1s^2 2s^2 2p^6$	2	8	Ø	:Ne:
Boron	B	5	metalloid	$1s^2 2s^2 2p^1$	2	3	+3	·B·
Carbon	C	6	nm	$1s^2 2s^2 2p^2$	2	4	+/- 4	·C·
Silicon	Si	14	metalloid	$1s^2 2s^2 2p^6 3s^2 3p^2$	3	4	+/- 4	·Si·
Oxygen	O	8	nm	$1s^2 2s^2 2p^4$	2	6	-2	:O:
Fluorine	F	9	nm	$1s^2 2s^2 2p^5$	2	7	-1	:F:
Sodium	Na	11	m	$1s^2 2s^2 2p^6 3s^1$	3	1	+1	Na·

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calcium	Ca	20	m	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$	4	2	+2	·Ca·
Beryllium	Be	4	m	$1s^2 2s^2$	2	2	+2	·Be·
copper	Cu	29	m	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^9$	transition metal (unknown)			
Magnesium	Mg	12	m	$1s^2 2s^2 2p^6 3s^2$	3	2	+2	·Mg·
chlorine	Cl	17	nm	$1s^2 2s^2 2p^6 3s^2 3p^5$	3	7	-1	:Cl:
Sulfur	S	16	nm	$1s^2 2s^2 2p^6 3s^2 3p^4$	3	6	-2	:S:
Nitrogen	N	7	nm	$1s^2 2s^2 2p^3$	2	5	-3	·N:
Bromine	Br	35	nm	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^5$	4	7	-1	:Br:
Krypton	Kr	36	nm	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6$	4	8	/	:Kr:

What is the relationship between an element's group number and its number of valence electrons?

all elements in the same group have same # of valence electrons

Do metals have a larger number of valence electrons or a lower number of valence electrons? Give an example.

smaller; no metal has more than 3 valence e⁻

PERIODIC TABLE WORKSHEET

Name _____

1. Where are the most active metals located? bottom left
2. Where are the most active nonmetals located? top right (except NG)
3. As you go from left to right across a period, the atomic size (decreases / increases). Why? stronger pull from nucleus
4. As you travel down a group, the atomic size (decreases / increases). Why? extra shell of electrons
5. A negative ion is (larger / smaller) than its parent atom.
6. A positive ion is (larger / smaller) than its parent atom.
7. As you go from left to right across a period, the first ionization energy generally (decreases / increases). Why? nonmetals hold e⁻ tighter
8. As you go down a group, the first ionization energy generally (decreases / increases Why? element gets bigger
9. Where is the highest electronegativity found? Fluorine
10. Where is the lowest electronegativity found? Francium
11. Elements of Group 1 are called alkali metals
12. Elements of Group 2 are called alkaline Earth metals
13. Elements of Group 3-12 are called transition elements
14. As you go from left to right across the periodic table, the elements go from (metals / nonmetals) to (metals / nonmetals).
15. Group 17 elements are called halogens
16. The most active element in Group 17 is Fluorine
17. Group 18 elements are called noble gases
18. What sublevels are filling across the Transition Elements? d + f orbitals
19. Elements within a group have a similar number of valence electrons
20. Elements across a series have the same number of energy levels
21. ~~A colored ion generally indicates a~~
22. As you go down a group, the elements generally become (more / less) metallic.
23. The majority of elements in the periodic table are (metals / nonmetals).
24. Elements in the periodic table are arranged according to their # of protons
25. An element with both metallic and nonmetallic properties is called a metalloid/ semiconductor

PERIODIC TABLE PUZZLE

Name _____

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
I																	
	F														G	H	
													B				A
C								E				J					

		D											

Place the letter of each of the above elements next to its description below.

1. An alkali metal C
2. An alkaline earth metal F
3. An inactive gas A
4. An active nonmetal H
5. A semi-metal B
6. An inner transition element D
7. Its most common oxidation state is -2. G
8. A metal with more than one oxidation state E
9. Metal with an oxidation number of +3 J
10. Has oxidation numbers of +1 and -1 I

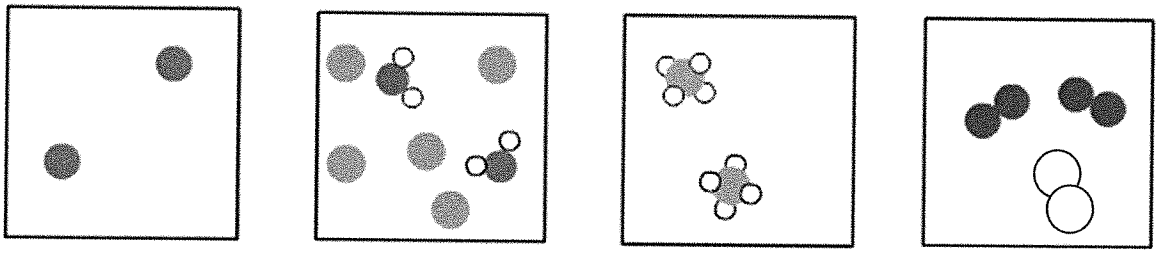
1. Which of the following formulas represents a pure compound?
   a. O_2
   b. Mg
   c. SO_2
   d. $CO_2 + H_2O$
   e. $Fe_2O_3 + Ne$

2. A substance that cannot be broken down into simpler substances is
   a. A compound
   b. A mixture
   c. An element
   d. An atom

3. The smallest unit of an element that has properties of that element is
   a. A mixture
   b. An atom
   c. A molecule
   d. A compound

4. Which of the following is a compound?
   a. $N_2 + O_2 + CO_2$
   b. CO
   c. Co
   d. Fe

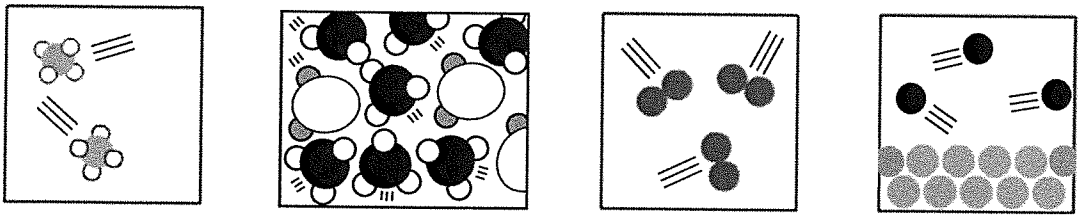
For questions 5-8 refer to the figures shown below. There may be multiple answers.



A B C D

5. Which figure(s) contain only elements? A + D
6. Which figure(s) represent a compound? C
7. Which figure(s) represent(s) a mixture? B + D
8. Which figure(s) show(s) only molecules? C + D

Questions 9-11 refer to the figures shown below: **(THERE MAY BE MULTIPLE ANSWERS!)**:



A B C D

9. Which figure(s) show only a gas? A + C
10. Which figure(s) show a solid? D
11. Which figure(s) show a liquid? B