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Chemistry

Chemistry Unit Review

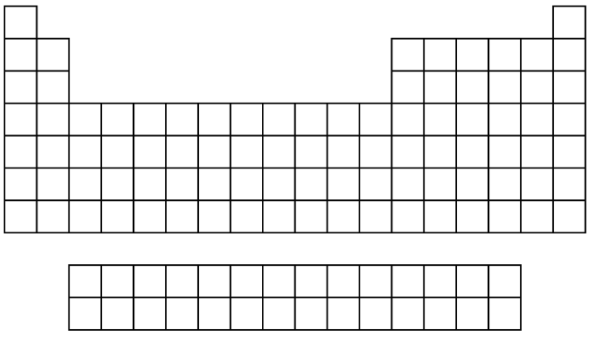
1. Draw the Bohr or Lewis diagrams for the following atoms/ions. Be sure to include the number of protons and the number of neutrons in the middle of your diagram.

Element	Bohr Model	Element	Lewis Model
Lithium atom		Phosphorus atom	
Chlorine Ion		Chlorine ion	
MgF_2		NH_3	
H_2O		CH_4	

2. Periodic Table:

On the blank periodic table, label/colour the following items:

a. Metals
b. Non-metals
c. Metalloids
d. Alkali metals
e. Alkaline earth metals
f. Halogens
g. Noble gases



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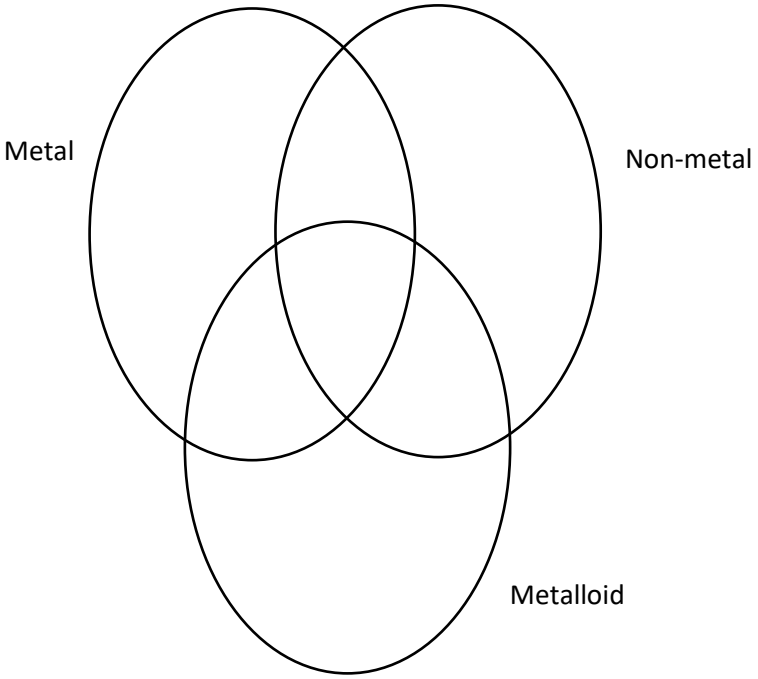
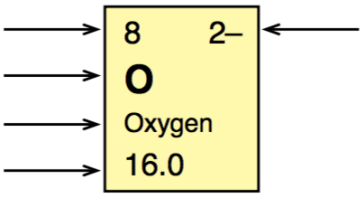
3. Complete the following Venn diagram by placing the letter in the right spot:

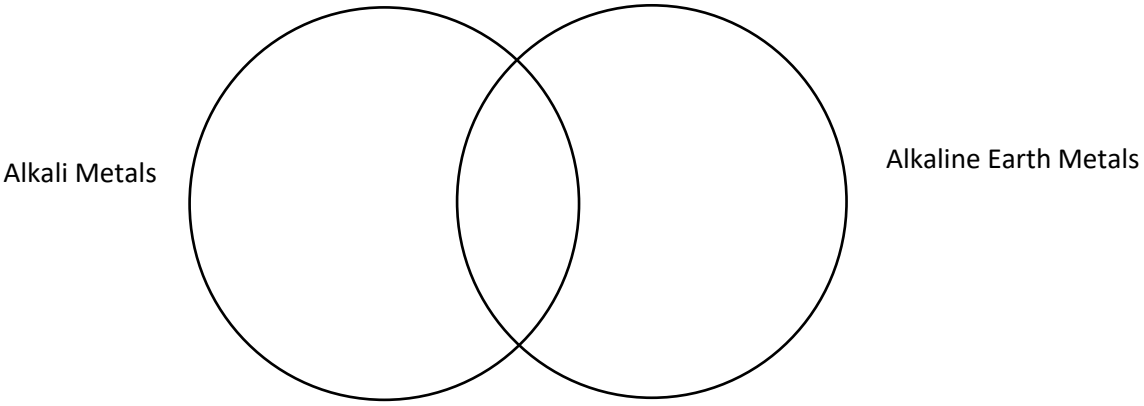
a.) Brittle
b.) Ductile
c.) Not shiny
d.) Malleable
e.) Not ductile
f.) Not malleable
g.) Shiny and smooth
h.) Dull-looking solids
i.) Including halogens
j.) Include noble gases
k.) Includes alkali metals
l.) Gases at room temperature
m.) Includes alkaline-earth metals
n.) Mostly solids at room temperature
o.) Poor conductors of electric current
p.) Poor conductors of thermal energy
q.) Good conductors of electric current
r.) Good conductors of thermal energy
s.) Some elements are liquids at room temperature
t.) Has an atomic mass and a distinct atomic number
u.) Have physical and chemical properties of both metals and non-metals
v.) Can react with other elements to form compounds (except most noble gases)
w.) Elements that are made of atoms consisting of protons, electrons and neutrons



4. Label the following diagram with the appropriate terms:



5. Compare and contrast alkali metals and alkaline earth metals. Brainstorm at least 4 differences and 4 similarities between the two families.



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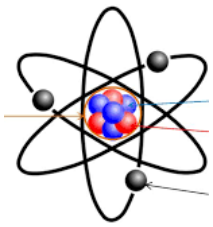
6. The columns on the periodic table are called:

7. The rows on the periodic table are called:

8. Describe a periodic trend relating to radius.

9. List the three subatomic particles and their accompanying charges:

10. Label the following diagram:



11. Most of the volume from an atom comes from:

12. Most of the mass from an atom comes from:

13. What is a valence shell?

14. How many electrons are able to occupy in…

    h. The first shell?
    i. The second shell?
    j. The third shell?

15. All atoms in the same period will have the same number of _____.

16. All atoms in the same group/family will have the same number of _____.

17. Why are Noble Gases stable?

18. Why do elements tend to lose or gain electrons and become ions?

19. Describe how ionic compounds are formed based on their valence electrons.

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20. Describe how covalent compounds are formed based on their valence electrons.

21. Naming ionic and covalent compounds:
Write formulas for the following compounds and classify as ionic (I) or covalent (C):

k. Lithium chloride _____ _____
l. Silver nitrate _____ _____
m. Zinc hydroxide _____ _____
n. Carbon disulfide _____ _____
o. Iron (III) phosphate _____ _____
p. Copper (I) iodide _____ _____
q. Tin (IV) fluoride _____ _____
r. Barium dichromate _____ _____
s. Beryllium nitrite _____ _____
t. Sulfur trioxide _____ _____
u. Boron trichloride _____ _____
v. Dibromine pentoxide _____ _____
w. Strontium sulfide _____ _____
x. Tin (II) iodide _____ _____
y. $NaClO_4$ _____ _____
z. P_2O_3 _____ _____
aa. Li_3P _____ _____
bb. FeS _____ _____
cc. $MgBr_2$ _____ _____
dd. $PbCrO_4$ _____ _____
ee. $ZnSO_4$ _____ _____
ff. K_2CO_3 _____ _____
gg. Cl_2S_5 _____ _____
hh. Al_2O_3 _____ _____
ii. NF_3 _____ _____
jj. $Cu(NO_3)_2$ _____ _____
kk. $Cu(NO_3)_2$ _____ _____