

Review - Nomenclature and Lewis Diagrams

1.) Write the proper formula for the chemical names below.

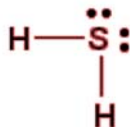
- a.) sodium oxide Na₂O
- b.) lithium hydroxide monohydrate LiOH · H₂O
- c.) lead (II) nitride Pb₃N₂
- d.) Potassium sulphide K₂S
- e.) tin (IV) telluride SnTe₂
- f.) Nitric acid HNO₃
- g.) barium bisulphide tetrahydrate Ba(HS)₂ · 4H₂O
- h.) dinitrogen monoxide N₂O

2.) Write the correct name for the following compounds.

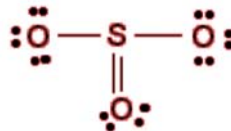
- a.) CuO copper (II) oxide
- b.) V₃N₅ vanadium (V) nitride
- c.) NH₄ClO₄ ammonium perchlorate
- d.) Pt₂O₃ · 3H₂O platinum (III) oxide trihydrate
- e.) Cl₂O dichlorine monoxide
- f.) HF hydrofluoric acid
- g.) I₂O₅ diiodine pentoxide

3.) Draw the Lewis structure for each of the following molecules:

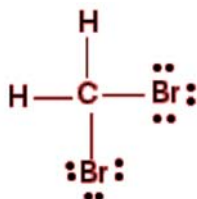
a.) H₂S



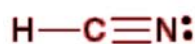
b.) SO₃



c.) CH₂Br₂

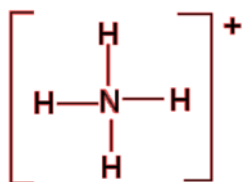


d.) HCN

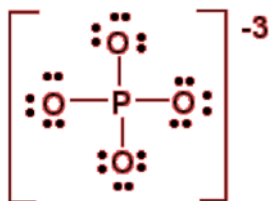


4.) Draw the Lewis diagram for each of the following polyatomic ions:

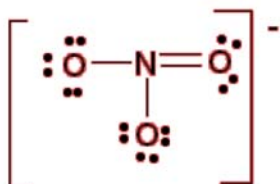
a.) $\underline{\text{N}}\text{H}_4^+$



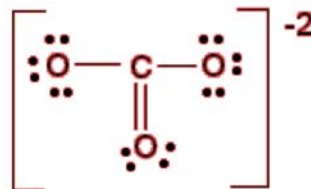
b.) $\underline{\text{P}}\text{O}_4^{-3}$



c.) $\underline{\text{N}}\text{O}_3^-$

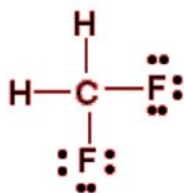


d.) $\underline{\text{C}}\text{O}_3^{-2}$

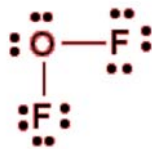


5.) Draw the Lewis structure for the following molecules or ions.

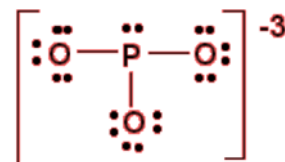
a.) $\underline{\text{C}}\text{H}_2\text{F}_2$



b.) $\underline{\text{O}}\text{F}_2$



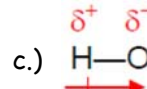
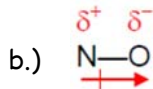
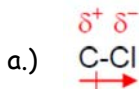
c.) $\underline{\text{P}}\text{O}_3^{-3}$



6.) For each of the bonds below:

i.) Use delta notation (δ^+ and δ^-) to indicate which atom is more electronegative

ii.) Use an arrow to point from the less electronegative atom to the more electronegative atom.



7.) Identify the type of bond described for each of the following as ionic, polar covalent, nonpolar covalent, or metallic.

Polar Cov a.) the $\text{C}-\text{O}$ bonds in CO_2

Covalent b.) The bonds in F_2

Ionic c.) the bonds in K_2O

Covalent d.) The $\text{C}-\text{C}$ bonds in C_3H_8

Metallic e.) the bonds in Ba

Polar Cov f.) The bonds in H_2O

8.) Determine whether the following five molecules are polar or nonpolar:

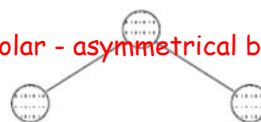
CO₂:

Nonpolar - symmetrical bonds cancel out



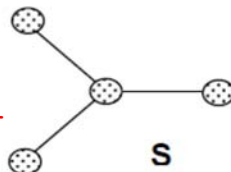
H₂O:

Polar - asymmetrical bonds



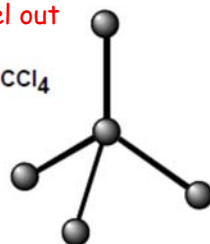
SO₃

Nonpolar - symmetrical bonds cancel out



Nonpolar - symmetrical bonds cancel out

CCl₄



Polar - asymmetrical bonds due to Hydrogen

CHCl₃

