

1.) For each of the following formulas write the category that the compound belongs in and the correct name. The possible categories are binary ionic, binary molecular, ternary ionic, acid, or hydrate.

FORMULA	CATEGORY	NAME
1.) AgCl		
2.) Ca ₃ P ₂		
3.) P ₂ O ₅		
4.) NaH ₂ PO ₄		
5.) Sr(C ₂ H ₃ O ₂) ₂		
6.) Cl ₂ O ₇		
7.) H ₂ Te		
8.) Cs ₃ N		
9.) HBrO		
10.) H ₂ SO ₃		
11.) MgS		
12.) S ₂ F ₅		
13.) CoCl ₂ ·6H ₂ O		
14.) FePO ₄		

FORMULA	CATEGORY	NAME
15.) NH_4IO_3		
16.) HIO		
17.) HI		
18.) CrO_3		
19.) SO_3		
20.) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$		
21.) HNO_2		
22.) $\text{V}(\text{SO}_4)_2$		
23.) NaHCO_3		
24.) $\text{Be}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$		
25.) AuN		

2.) For each of the following names write the category that the compound belongs in and the correct formula. The possible categories are binary ionic, binary molecular, ternary ionic, acid, or hydrate.

FORMULA	CATEGORY	NAME
1.)		Sodium sulfate decahydrate
2.)		Aluminum sulfide
3.)		Dichlorine monoxide
4.)		Hydroselenic acid
5.)		Molybdenum (III) acetate
6.)		Hypobromous acid
7.)		Dinitrogen trioxide
8.)		Rubidium phosphite
9.)		Hydrocyanic acid
10.)		Cadmium phosphite
11.)		Phosphoric acid
12.)		Mercury(I) chloride*
13.)		Sulfur mononitride
14.)		Perchloric acid

FORMULA	CATEGORY	NAME
15.)		Zinc nitrate
16.)		Nickel (II) hydroxide
17.)		Potassium carbonate
18.)		Hydroiodic acid
19.)		Dinitrogen tetroxide
20.)		Sulfur trioxide
21.)		Aluminum sulfate nonahydrate
22.)		Acetic acid
23.)		Gallium nitride**
24.)		Aluminum oxide
25.)		Bromic acid

* The mercury(I) ion is Hg_2^{2+} and not Hg^+ . MEMORIZE THIS!

** Gallium has a +3 charge here.

3.) For each of the following compounds write the correct formula beneath the given name and write the correct Lewis structure in the adjacent box. If there are resonance forms, write all reasonable resonance forms in the box.

COMPOUND	LEWIS STRUCTURE
<p>1.) Dichlorine monoxide (Put oxygen in the middle) <u>FORMULA</u> Cl₂O</p>	
<p>2.) The sulfite ion <u>FORMULA</u> SO₃²⁻</p>	
<p>3.) Sulfur trioxide <u>FORMULA</u> SO₃</p>	
<p>4.) Ammonia* (common name - memorize) <u>FORMULA</u> NH₃</p>	

COMPOUND	LEWIS STRUCTURE
5.) Water* (common name - memorize) <u>FORMULA</u> H ₂ O	
6.) Dinitrogen monoxide <u>FORMULA</u> N ₂ O	
7.) The ammonium ion <u>FORMULA</u> NH ₄ ⁺	
8.) Carbon dioxide <u>FORMULA</u> CO ₂	
9.) Boron trifluoride <u>FORMULA</u> BF ₃	

COMPOUND	LEWIS STRUCTURE
10.) Beryllium dihydride* <u>FORMULA</u> BeH_2	
11.) The phosphite ion <u>FORMULA</u> PO_3^{3-}	
12.) Carbon tetrachloride <u>FORMULA</u> CCl_4	
13.) Nitrogen triiodide <u>FORMULA</u> NI_3	
14.) Sulfur hexafluoride** <u>FORMULA</u> SF_6	

* Treat Be (beryllium) and H (hydrogen) as a nonmetals in this compound. Be only needs 4 valence electrons in it's Lewis structure (it is an exception to the octet rule).

** This compound is an exception to the octet rule also. S is in the middle with all 6 fluorine atoms attached to it.

4.) For each of the following compounds write the correct Lewis structure in the adjacent box. The order that the elements are written in these formulas reflects the order of attachment.

COMPOUND	LEWIS STRUCTURE
1.) HCCH	
2.) CH ₃ CH ₂ OH	
3.) CH ₃ CO ₂ H	
4.) O ₃	

COMPOUND	LEWIS STRUCTURE
5.) $\text{CH}_3\text{CH}_2\text{C}(\text{O})\text{CH}_2\text{CH}_3$	
6.) CH_2CHCH_3	
7.) $\text{CH}_3\text{CH}_2\text{CHCHCH}_3$	
8.) $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_3$	
9.) CHO_2H	

COMPOUND	LEWIS STRUCTURE
10.) $\text{CH}_3\text{CH}_2\text{NH}_2$	
11.) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$	