

Review for Test 2: Chemical Bonding

- Compare the following terms:

a) Lewis diagram and structural diagram	b) Ionic bond and covalent bond
c) Single bond and a double bond	d) Polar bond and non-polar bond
e) Non-polar molecule and non-polar bond	f) Trigonal planar shape and trigonal pyramid shape
g) Linear shape and v-shape	
- Draw the Lewis diagrams for the following:

a) lithium sulfide	b) calcium phosphide
c) silver nitrate	d) carbon monoxide
e) nitrogen trifluoride	f) aluminum
g) phosphide ion	h) calcium ion
i) hydroxide	
- Draw structural diagrams for the following:

a) Sulfur monoxide	b) Cl_2	c) Ammonium chloride	d) N_2
e) NO_2^-	f) SiO_2	g) CH_2Cl_2	h) PO_4^{3-}
i) CN^-	j) O_3	k) NH_3	l) CO_3^{2-}
m) C_2H_4	n) C_2H_2		
- Draw and name the shape of:

a) NO_2^-	b) SiO_2	c) CH_2Cl_2	d) O_3
e) NH_3	f) CO_3^{2-}	g) CH_2CH_2	
- Rank the following bonds from highest to lowest polarity and then assign partial charges where appropriate.

O-O	O-H	O-Cl	C-H	P-H
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- Which compounds below will be polar molecules? Assign partial charges to the polar molecules.

a) SiO_2	b) CH_2Cl_2	c) NH_3
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- i) Predict which of the following compounds are ionic, purely covalent or polar covalent.
 ii) Name each of the compounds.
 iii) Which substance has the greatest ionic character?

a) I_2	b) SO_2	c) OCl_2
d) Fe_2O_3	e) KBr	f) SrO
g) BCl_3	h) HF	i) CsF
- Create all the possible formulas of substances formed between oxygen and chlorine and name each.
- Complete the following chart.

	Name	Formula
a)	Lithium chlorate	
b)	Sodium hydroxide	
c)	Silver nitrate	

d)		ZnBr_2
e)	Magnesium sulfide	
f)		$\text{H}_2\text{CO}_{3(\text{aq})}$
g)		Cu_3P
h)	Silicon dioxide	
i)	Sulfurous acid	
j)	Lead (II) sulfate	
k)		N_2O_4
l)	Tin(IV) oxide	
m)	Phosphorus pentachloride	
n)		KNO_2
o)		SO
p)	Calcium cyanide	
q)	Nitrous acid	
r)	Iron (II) nitrate	
s)	Calcium hydrogen carbonate	
t)		$\text{Be}(\text{FO}_3)_2$
u)		$\text{HI}_{(\text{aq})}$
v)	Phosphoric acid	
w)	Sodium dihydrogen phosphate	
x)		$\text{HBrO}_{3(\text{aq})}$
y)	Aluminum phosphate	
z)	Sulfuric acid	