

Name: _____

Date: _____

Unit 8 - Topic 1

Bonding & Formulas - Mostly Review

1. Identify each substance as Ionic, Molecular, or Metallic

Substance A	Substance B	Substance C
shiny, good conductor as a solid, high melting point, malleable	brittle, good conductor when dissolved in water, but not as solid, high melting point	poor conductor both as a solid and dissolved, low melting point

2. Name Each: Categorize each as Ionic (I) or Molecular (M), then name it.

Chemical Substance	Category (I/M)	Name
NiCl ₂		
SO ₃		
Ca ₃ (PO ₄) ₂		
N ₂ O ₅		

3. Draw the Lewis dot structures for the following. Note, some are ionic and some covalent.

NaBr	H ₂ O	CO ₂	N ₂	CH ₄

4. Write the chemical formulas for the following:

1. aluminum chloride _____

3. sodium carbonate _____

2. ammonium sulfate _____

4. Iron (III) chloride _____

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- Which species does not have a noble gas electron configuration?
 - (1) Na^+
 - (2) Mg^{+2}
 - (3) Ar
 - (4) S
- Which of the following compounds is composed of atoms that are sharing valence electrons
 - (1) CaO
 - (2) Na_2O
 - (3) CO
 - (4) NiO
- If the electronegativity difference between elements in compound NaX is 2.1, what is element X?
 - (1) bromine
 - (2) chlorine
 - (3) fluorine
 - (4) oxygen
- The water solution of which of the following substances is the best conductor of electricity?
 - (1) KCl
 - (2) $\text{C}_6\text{H}_{12}\text{O}_6$
 - (3) CO_2
 - (4) CO
- Which statement best describes the substance that results when electrons are transferred from a metal to a non-metal?
 - (1) It contains ionic bonds and has a low melting point.
 - (2) It contains ionic bonds and has a high melting point.
 - (3) It contains covalent bonds and has a low melting point.
 - (4) It contains covalent bonds and has a high melting point.
- Which of the following solids would be predicted to have the highest melting point, based on bond type?
 - (1) $\text{H}_2\text{O}_{(s)}$
 - (2) $\text{Na}_2\text{O}_{(s)}$
 - (3) $\text{SO}_2_{(s)}$
 - (4) $\text{CO}_2_{(s)}$
- Which substance contains metallic bonds?
 - (1) $\text{Hg}_{(l)}$
 - (2) $\text{H}_2\text{O}_{(l)}$
 - (3) $\text{NaCl}_{(s)}$
 - (4) $\text{C}_6\text{H}_{12}\text{O}_6_{(s)}$
- What is the correct IUPAC name for the compound NH_4Cl
 - (1) nitrogen chloride
 - (2) nitrogen chlorate
 - (3) ammonium chloride
 - (4) ammonium chlorate
- The name of the compound KClO_2 is potassium
 - (1) hypochlorite
 - (2) chlorite
 - (3) chlorate
 - (4) perchlorate
- Which formula represents an ionic compound?
 - (1) NaCl
 - (2) N_2O
 - (3) HCl
 - (4) H_2O