

Name:
Date:
Period:

4.1 Tracked Assignment

1. Define an ionic bond.

attraction between anion & cation

2. How do ionic bonds fulfill the octet rule?

metal transfer e^- to nonmetal

3. What are the properties of an ionic compound?

brittle, crystalline solid, high melting point, ~~shiny~~
conduct in solution, soluble

4. Why is an ionic compound neutral even though it is made up of cations and anions?

positive & negative charges cancel out

5. Which of the following would be able to make an ionic bond?

a. Cl, Br

b. Li, Cl

c. K, He

d. I, Na

ionic - b, d

6. Which of the following compounds would be ionic?

a. H_2O

b. Na_2O

c. NH_4Br

d. $CaSO_4$

e. SO_2

f. CH_4

ionic - b, c, d

7. Under what conditions are parentheses included in ionic formulas? What about roman numerals?

• when you have more than one ~~copy~~ of a polyatomic ion
• for transition metals

8. What is wrong in the following formulas?

a. $BeCl_4$ $BeCl_2$ for charges

b. V_3N_3 simplify to VN

c. Na_6O Na_2O based on charges

d. $CaCN_2$ $Ca(CN)_2$ need parentheses

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9. Write the formulas and names for the following when they combine.

- a. K and S K_2S
- b. Ca and N Ca_3N_2
- c. Na and I Na_2I
- d. Mn (III) and O Mn
- e. Al and SO_3^{2-} $Al_2(SO_3)_3$

10. Write the formulas for the following:

- a. Beryllium chloride $BeCl_2$
- b. Strontium oxide SrO
- c. Chromium (III) nitrate $Cr(NO_3)_3$
- d. Calcium acetate $Ca(C_2H_3O_2)_2$
- e. Iron (II) hydroxide $Fe(OH)_2$
- f. Platinum (I) arsenide Pt_3As
- g. Magnesium carbide MgC_2
- h. Copper (II) sulfite $CuSO_3$

11. Write names for the following:

- a. $(NH_4)_3PO_3$ ~~ammonium~~ ammonium phosphite
- b. $Ni(NO_3)_3$ nickel (III) nitrate
- c. $NaClO_3$ sodium chlorate
- d. Y_2Te yttrium (I) telluride
- e. $Cs_2(SO_4)$ cesium sulfate
- f. BaI_2 barium iodide
- g. $WCrO_4$ tungsten ~~trichromate~~ (II) chromate
- h. Li_3BO_3 lithium borate