Chemistry Review SNC2D

1. What are some examples of physical properties and chemical properties?
2. State 2 differences between ionic compounds and molecular compounds.
3. Potassium sulfate has the formula K_2S. Draw Lewis diagrams to show the electron transfer that occurs when potassium and sulfur combine to form potassium sulfide.
4. Write the name of the following compounds:
   a) Li_2S b) AlF_3 c) CuO
   d) Na_3N e) Zn_3P_2 f)CrP
5. Write the formula for the following compounds:
   a) Lithium Chloride
   b) Iron (II) Phosphide
   c) Copper (I) Sulfide
   d) Potassium Oxide
   e) Calcium Fluoride
   f) Sodium Iodide
6. What are polyatomic ions?
7. Determine the chemical formula for the following compounds
   a) Potassium chromate
   b) Strontium Hyperbromite
   c) Ammonium carbonate
   d) Nickel Sulfate
   e) Barium Dichromate
   f) Ammonium Perbromate
8. What element does a negative ion or polyatomic ion need to combine with in order to become an acid?
9. Determine the formula for each of the following acids
   a) Nitric Acid
   b) Iodous Acis
   c) Hydrosulfuric Acid
   d) Sulfurous Acid
   e) Phosphoric Acid
   f) Hydrobromic Acid
10. Write the name for each of the following acids
    a) $H_2CrO_{4\,(aq)}$
    b) $HF_{\,(aq)}$
    c) $HClO_{\,(aq)}$
11. State all the elements that cannot exist on their own and need to combine with a second identical atom to form a diatomic molecule. (Remember: Horses Need Oats For Clear Brown I's)
12. Write the chemical formula for the following
    a) Methane
    b) Ammonia

c) Dinitrogen tetroxide
d) Carbon tetrabromide

13. Name the following chemicals
    a) CO b) SCl_6
    c) N2O d) H_2O
14. What happens to mass during a chemical reaction?
15. Balance the following chemical equations
    a) $FeS + HCL \rightarrow H_2S + FeCl_2$
    b) $NaOH + H_3PO_4 \rightarrow Na_3PO_4 + H_2O$
    c) $Cl_2 + CrBr_3 \rightarrow Br_2 + CrCl_3$
    d) $FeS + O_2 \rightarrow Fe_2O_3 + SO_2$
    e) $FeCl_3 + (NH_4)_2S \rightarrow Fe_2S_3 + NH_4Cl$
16. Write a word equation and a balanced chemical equation for the following
    a) Iron (III) hydroxide reacts with hydrogen gas to produce water and iron
    b) Sodium hydrogen carbonate reacts with sulfuric acid to produce carbon dioxide and sodium sulfate and water.
17. State whether these are synthesis or decomposition reactions and balance the equations
    a) $H_2 + Cl_2 \rightarrow HCl$
    b) $KClO_3 \rightarrow KCl + O_2$
    c) $Al + O_2 \rightarrow Al_2O_3$
18. State whether these are single or double displacement reactions and balance the equations
    a) $Al + FeO \rightarrow Al_2O_3 + Fe$
    b) $BaCl_2 + Na_2SO_4 \rightarrow BaSO_4 + NaCl$
    c) $AgNO_3 + Na_3PO_4 \rightarrow Ag_3PO_4 + NaNO_3$
    d) $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$
19. How can you differentiate and acid from a base? (What chemical must they combine with?)
20. What is more acidic, a substance with a pH of 6 or a pH of 4?
21. What is more basic, a substance with a pH of 9 or a pH of 12?
22. How many more or less times acidic is:
    a) pH 3 to a pH 6
    b) pH 2 to a pH 1
23. How many more or less times basic is:
    a) pH 10 to a pH 14
    b) pH 11 to a pH 9
24. What substance(s) are produced during neutralization?
25. Write a word equation and a balanced chemical equation for the following neutralizations:
    a) Lithium Hydroxide and Sulfurous Acid
    b) Beryllium Hydroxide and Nitric Acid
    c) Iodic Acid and Ammonium Hydroxide.
26. What are the main causes of acid rain?
27. State three problems of acid rain.