

Name: \_\_\_\_\_

20 Pts.

**Classify and Write a Balanced Chemical Equation for each of the Following Reactions.**

- For the reaction of aluminum with oxygen to form aluminum oxide:
  - Each aluminum atom (gains/loses) how many electrons? \_\_\_\_\_
  - Each oxygen atom (gains/loses) how many electrons? \_\_\_\_\_
  - How many total electrons are transferred in the compound? \_\_\_\_\_
- Iron metal reacts with oxygen. (iron (III) is the product) classification: \_\_\_\_\_
- Nickel(II) chloride and calcium classification: \_\_\_\_\_
- Butane,  $C_4H_{10}$  is combusted classification: \_\_\_\_\_
- Potassium chloride is decomposed. classification: \_\_\_\_\_
- Sodium metal is added to a solution of magnesium nitrate. classification: \_\_\_\_\_
- Bubbles form when an electric current is added to water. classification: \_\_\_\_\_
- Glucose,  $C_6H_{12}O_6$  is combusted. classification: \_\_\_\_\_
- Mercury(II) oxide is heated and decomposes into its elements. classification: \_\_\_\_\_
- Calcium metal is added to a solution of tin(II) chloride. classification: \_\_\_\_\_
- Zinc is reacted with iodine. classification: \_\_\_\_\_
- Hydrogen and oxygen make an explosive reaction. classification: \_\_\_\_\_
- Copper reacts with a solution of silver nitrate. ( $Cu^{2+}$  is the product) classification: \_\_\_\_\_

14. Zinc is added to hydrochloric acid. classification: \_\_\_\_\_

15. Magnesium metal is burned in the air. classification: \_\_\_\_\_  
(Write two separate reactions that will occur with the two major gases in the air)

16. Solid europium is added to concentrated hydrofluoric acid. classification: \_\_\_\_\_  
(Europium metal reacts to form a 3+ ion)

17. Silicon is produced for chemical and electronics industries by the following reactions:

a.) Silicon dioxide reacts with pure carbon. classification: \_\_\_\_\_  
(Carbon dioxide is the other product)

b.) Silicon tetrachloride is reacted with very pure magnesium metal. classification: \_\_\_\_\_

18. Solid iron(III) oxide is added to a solution of nitric acid. classification: \_\_\_\_\_

19. Sodium carbonate is used to clean up a spill of nitric acid. classification: \_\_\_\_\_

20. A heavy olefin fuel  $C_{152}H_{260}$  is combusted. Classification: \_\_\_\_\_