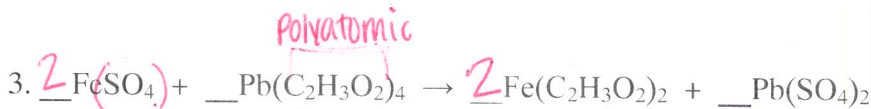
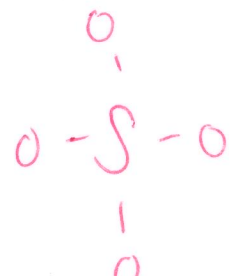


Name: _____

Unit 11: Types of Chem. Rxns Test Review-L

Part 1: Balance the following equations.

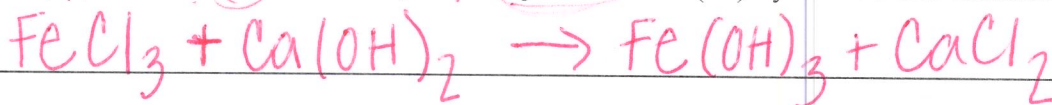


Part 2: Write the chemical equation from the word equation. You can leave them unbalanced.

4. The decomposition of potassium nitrate forms potassium nitrite and oxygen.



5. Iron (III) chloride and calcium hydroxide produce iron (III) hydroxide and calcium chloride.



Part 3: Use the following reaction.

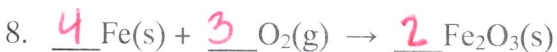


Soluble = aqueous
insoluble = solid

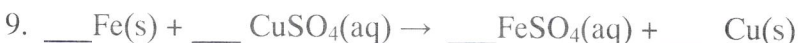
6. In the parenthesis, list the states of matter for each compound in the above reaction.

7. What is the precipitate in the above reaction? BaCrO₄

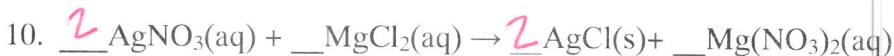
Part 4: List the type of reaction (Synthesis, Decomposition, Single Replacement, Double Replacement, or Combustion) in the blanks below. And then balance the equation.



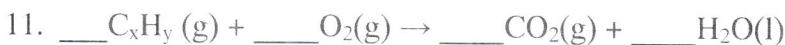
Synthesis



Single Replacement



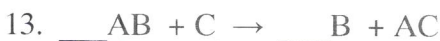
double replacement



combustion



decomposition



single replacement



single replacement

Part 5: Activity Series

15. For which type of reaction (synthesis, decomposition, single replacement, double replacement etc.) should an activity series be used? single replacement

16. Circle which element is more active in each set of elements listed.

Na or K

Mg or Cu

Au or Li

Zn or Ba

Al or Fe

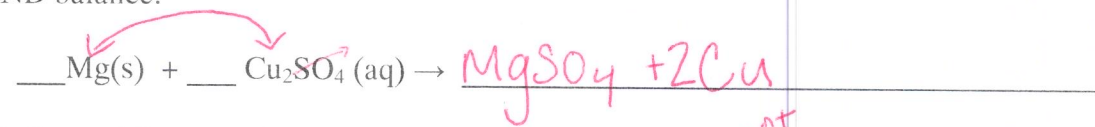
Co or Cr

17. Nonmetal activity increases (up, down) and to the (right, left). **F**

18. Circle which element is more active in each set of elements listed.

- Cl or I S or F Br or I F or Cl Cl or Br Cl or F

19. Will the following reaction occur based on metal activity? Yes or No If so, predict the products AND balance.



Part 6: Law of Conservation of Mass

20. What is the Law of Conservation of Mass? matter is not created or destroyed

21. $2\text{KClO}_3(\text{s}) \rightarrow 2\text{KCl}(\text{s}) + 3\text{O}_2(\text{g})$ How many grams of oxygen are produced from the decomposition of potassium chlorate? 30

150 grams 120 grams ? grams

$150 = 120 + x$

22. How does a balanced chemical equation show the law of conservation of mass?
the mass is the same on both sides so even though you end up w/ new products, you still have the parts you started w/

23. When applying the Law of Conservation of Mass, the total mass of the reactants must equal the total mass of the products in a chemical equation.

Part 7: Oxidation numbers and Oxidation Reduction Reactions.

List the oxidation numbers above each of the following compounds:

24. $\overset{+1}{\text{Na}}_2\overset{-2}{\text{S}}_2\overset{-2}{\text{O}}_3$ 25. $\overset{+4}{\text{C}}\overset{-2}{\text{O}}_3^{2-}$ 26. $\overset{0}{\text{N}}_2$ 27. $\overset{+5}{\text{N}}_2\overset{-2}{\text{O}}_5$

For each of the following:

- Assign oxidation numbers.
- Identify the substances oxidized/reduced
- Identify oxidizing agent and reducing agent.

OILRIG

28. $\text{Mn}^{4+} + 2\text{F}^{-} \rightarrow \text{Mn}^{2+} + \text{F}_2$
- a. Oxidized: F b. Reduced: Mn
- c. Oxidizing Agent: Mn d. Reducing agent: F
29. $\text{Zn} + 2\text{HBr} \rightarrow \text{ZnBr}_2 + \text{H}_2$
- a. Oxidized: Zn b. Reduced: H
- c. Oxidizing Agent: H d. Reducing agent: Zn

Identify as oxidation or reduction.

30. $\text{Cr}^{3+} \rightarrow 3\text{e}^{-} + \text{Cr}^{6+}$ O (decomposition) +++
31. $5\text{e}^{-} + \text{Mn}^{7+} \rightarrow \text{Mn}^{2+}$ R (synthesis) +++
32. $\text{NO}_2 + \text{H}_2\text{O} \rightarrow 1\text{e}^{-} + 2\text{H}^{+} + \text{NO}_3^{-}$ R ++++

Write the oxidation and reduction half reactions from the following:

- $2\text{FeBr}_3 + 3\text{Cl}_2 \rightarrow 2\text{FeCl}_3 + 3\text{Br}_2$
33. Oxidation half reaction: _____
34. Reduction half reaction: _____