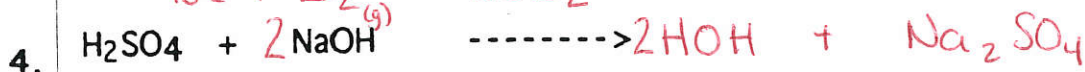


REVIEW CHEMISTRY CHAPTER 9

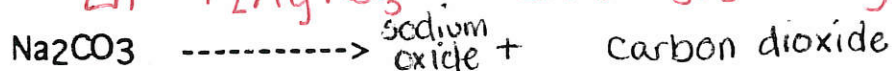
- Directions: A) Write the formula for the reactants where necessary.
 B) Predict the products.
 C) Balance the equations.
 D) IDENTIFY the type of reaction



3. Beryllium metal reacting with iodine gas \rightarrow



5. Zinc metal reacting with silver nitrate \rightarrow



8. Lithium + chloride \rightarrow



10. **Applying concepts** Given the unbalanced equation $\text{PCl}_5 + \text{H}_2\text{O} \rightarrow \text{H}_3\text{PO}_4 + \text{HCl}$, a student balances it by writing the following: $\text{PCl}_5 + 2\text{H}_2\text{O}_2 \rightarrow \text{H}_3\text{PO}_4 + \text{H}_5\text{Cl}$. Has it been balanced correctly? Why or why not? **ONLY USE COEFFICIENTS**

11. Holly wants to extract pure iron from a sample of iron(II) sulfate. Explain why she should use aluminum metal rather than copper metal. Write a balanced equation for the reaction between iron(II) sulfate and aluminum.

12. Identify the type of reaction for each of the following: (Section 9-3)

- (a) An element reacts with an ionic compound, producing a different compound and element.
- (b) When an electric current is passed through a compound, two elements are produced.
- (c) Two ionic compounds are combined to form a solid compound and a different ionic compound.
- (d) Manganese metal reacts with sulfuric acid to produce manganese(II) sulfate and hydrogen gas.
- (e) Silver chlorate is decomposed with heat to give silver chloride and oxygen gas.
- (f) Chromium metal is heated in oxygen

SR

Dec.

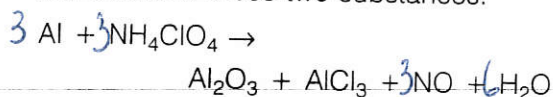
DR

SR

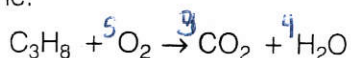
Dec.

DC or Comb.

13. Reusable booster rockets are employed to launch United States space shuttles. The rockets use a mixture of aluminum and ammonium perchlorate for fuel. Balance the equation that shows the chemical reaction between these two substances.



14. Propane (C_3H_8) is a common fuel used for cooking and home heating. The combustion of propane releases carbon dioxide and water vapor into the atmosphere. Balance the equation for the combustion of propane.



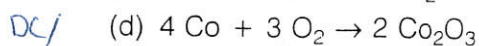
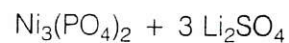
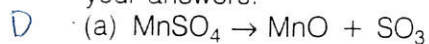
15. If a chemical equation is impossible to balance, what is most likely the problem?

16. Explain how a balanced equation verifies the law of conservation of matter.

17. Describe the steps you would follow to balance a chemical equation.

18. What are coefficients and why are they used?

19. **Classifying** Identify the type of reaction represented by each equation. Explain your answers.



Chemistry Chap. 5 -- Review and Practice

Predict the products. Balance the equations. Identify the type of reaction.

Dec P

DR

SR

Comb

SR

DR

Synth.

Dec 1

DR

SR

DR

Synth

Dec 1

SR

SR

DR

DR

1. $\text{CH}_4 + \text{O}_2 \rightarrow \text{H}_2\text{O} + \text{CO}_2$
2. $2\text{Cr}_2\text{O}_3 \rightarrow 4\text{Cr} + 3\text{O}_2$
3. $\text{ZnS} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2\text{S}$
4. $2\text{Al} + \text{Fe}_2\text{O}_3 \rightarrow \text{Al}_2\text{O}_3 + 2\text{Fe}$
5. $\text{H}_2 + \text{Br}_2 \rightarrow 2\text{HBr}$
6. $\text{Fe} + 2\text{HCl} \rightarrow \text{FeCl}_2 + \text{H}_2$
(Iron II)
7. $\text{BaCl}_2 + \text{Na}_2\text{CO}_3 \rightarrow 2\text{NaCl} + \text{BaCO}_3$
8. $2\text{Ca} + \text{O}_2 \rightarrow 2\text{CaO}$
9. $2\text{NH}_2 \rightarrow \text{N}_2 + 2\text{H}_2$
10. $\text{H}_2\text{CO}_3 + 2\text{NaOH} \rightarrow \text{Na}_2\text{CO}_3 + 2\text{H}_2\text{O}$
11. $\text{Ag} + \text{FeSO}_4 \rightarrow \text{NR}$
12. $2\text{C}_{10}\text{H}_{22} + 31\text{O}_2 \rightarrow 22\text{H}_2\text{O} + 20\text{CO}_2$
13. $3\text{BaCl}_2 + 2\text{Na}_3\text{PO}_4 \rightarrow 6\text{NaCl} + \text{Ba}_3(\text{PO}_4)_2$
14. $2\text{Cd} + \text{O}_2 \rightarrow 2\text{CdO}$
15. $\text{Fe}_2\text{S}_3 \rightarrow 2\text{Fe} + 3\text{S}$
16. $\text{Cu} + \text{ZnSO}_4 \rightarrow \text{NR}$
17. $2\text{Al} + 3\text{H}_3\text{PO}_4 \rightarrow 2\text{AlPO}_4 + 3\text{H}_2$
18. $2\text{Li}_3\text{PO}_4 + 3\text{Zn}(\text{NO}_3)_2 \rightarrow \text{Zn}_3(\text{PO}_4)_2 + 6\text{LiNO}_3$
19. $2\text{AgNO}_3 + \text{CaCl}_2 \rightarrow \text{Ca}(\text{NO}_3)_2 + 2\text{AgCl}$
20. $2\text{C}_4\text{H}_{10} + 13\text{O}_2 \rightarrow 10\text{H}_2\text{O} + 8\text{CO}_2$

Grade 6, 9, 11, 19

1 pt for predictions

