

Name: _____ Date: _____ Period: _____

Unit 11: Chapter 7 - Chemical Reactions Review Answer Key

Define:

1. Reactant: *A substance that undergoes change in a chemical reaction.*
2. Product: *New substances formed as a result of a chemical reaction.*
3. Catalyst: *A substance that affects the rate of a chemical reaction without being used up in the reaction.*
4. Coefficient: *Numbers that appear before a formula in a chemical equation to show the relative proportions of each reactant and product.*
5. Subscript: *A number written lower in a chemical formula indicating the amount of atoms present of an element (this number is not to be changed once written in chemical formula).*
6. Law of Conservation of Mass: *Matter cannot be created nor destroyed; only changed (atoms can be rearranged).*
7. Synthesis reaction (include an example): *A chemical reaction in which two or more substances react to form a single substance.* **$A + B \rightarrow AB$**
8. Decomposition reaction (include an example): *A chemical reaction in which a compound breaks down into two or more simpler substances.* **$AB \rightarrow A + B$**
9. Single replacement (include an example): *A chemical reaction in which one element takes the place of another element in a compound.* **$AB + C \rightarrow AC + B$**
10. Double replacement (include an example): *A chemical reaction in which two compounds exchange positive ions and form two new compounds.* **$AB + CD \rightarrow AD + CB$**
11. Combustion (include an example): *A chemical reaction in which a substance reacts rapidly with oxygen, often producing heat and light.* **$C_xH_y + O_2 \rightarrow CO_2 + H_2O$**
12. Endothermic reaction: *A chemical reaction that absorbs energy from its surroundings.*
13. Exothermic reaction: *A chemical reaction that releases energy to its surroundings.*
14. Chemical equation (include an example): *A representation of a chemical reaction in which the reactants and products are expressed as formulas.*
15. A **balanced equation** is an equation in which the number of atoms on the reactants' side **equals** the number of atoms on the products' side of the chemical equation.
16. Equilibrium: *A state in which the forward and reverse paths of a physical or chemical change take place at the same rate.*

Complete the following statements.

17. A reaction where the temperature is known to be high is a(n) **exothermic** reaction.
18. A chemical reaction that produces only one product is **synthesis**.
19. A chemical reaction that starts with only one reactant and forms two products is **decomposition**.
20. A chemical reaction that absorbs energy is **endothermic**.
21. The general formula $A + BC \rightarrow AC + B$ illustrates a **single-replacement** reaction.
22. The arrow in a chemical reaction can mean **produces**, **yields** or **forms**.
23. A reaction that starts and ends with two compounds is **double-replacement**.
24. A **catalyst** is a substance that is not used up in a reaction.
25. In a compound, energy is contained in the **chemical bonds**.
26. The burning of a candle is an example of a **combustion** reaction.
27. In order to follow the Law of Conservation of Mass if you start with 98 grams of reactant you must end with **98** grams of product.
28. Write the coefficients of the two (2) following balanced equations on the lines provided.



Identify the type of reaction and balance the following reactions. You *MUST* show your element inventory.

1. P_4 + 6 $\text{Br}_2 \rightarrow$ 4 PBr_3 Type: **Synthesis**

2. 2 Fe + 3 $\text{Cl}_2 \rightarrow$ 2 FeCl_3 Type: **Synthesis**

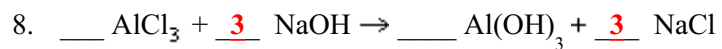
3. AlBr_3 + 3 $\text{K} \rightarrow$ 3 KBr + Al Type: **Single-replacement**

4. 2 $\text{H}_2\text{O}_2 \rightarrow$ 2 H_2O + O_2 Type: **Decomposition**

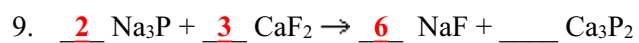
5. PbBr_2 + 2 $\text{HCl} \rightarrow$ 2 HBr + PbCl_2 Type: **Double-replacement**

6. N_2 + 3 $\text{H}_2 \rightarrow$ 2 NH_3 Type: **Synthesis**

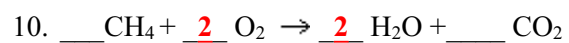
7. 2 Na + $\text{Br}_2 \rightarrow$ 2 NaBr Type: **Synthesis**



Type: **Double-replacement**



Type: **Double-replacement**



Type: **Combustion**