



CHEMISTRY TEST STUDY GUIDE

UNIT 8 - CHEMICAL REACTIONS

Test Date: April 6, 2015

Read over your **notes**, and *rework* your homework/classwork assignments. You will do **AWESOME** on this test if you can do the following things.

INTRODUCTION TO CHEMICAL REACTIONS - pages 260-270 (p. 241-250 old text books)

- Translate a balanced equation into words including chemical names, # of atoms/molecules/units, and states.
- Explain how the law of conservation of mass relates to atoms in a chemical reaction.
- Draw diagrams to demonstrate conservation of mass.

BALANCING EQUATIONS - PAGES 270-274 (p. 250-254 OLD TEXT)

- Balance a written chemical equation.
- Translate and balance word equations (including states).

TYPES OF REACTIONS - PAGES 276-284 (p. 256-267 OLDER TEXT)

- Identify the type of reaction.
- Predict the products formed in a reaction (bonus for physical states) and balance the equation.

ACTIVITY SERIES OF THE ELEMENTS - PAGES 285-287

- Explain the Activity series of the metals and nonmetals.
- Use the Activity series to predict whether a given reaction will occur and what the products will be.

CHEMICAL REACTIONS REVIEW - UNIT 8

CHOOSE THE WORDS IN THE LIST THAT BEST COMPLETE THE PARAGRAPHS

arrow	coefficient	delta	products
chemical equation	combination <i>Synthesis</i>	double replacement	reactant
chemical reaction	decomposition	precipitate	single_replacement

Another name for a chemical change is a(n) (1). Such a change can be represented by means of a written statement called a(n) (2). The symbol for the word "yields" in such a statement is a(n) (3). Any substance written to the left of this symbol is called a(n) (4). Any substance written to the right of this symbol is called a(n) (5). A number written just to the left of a formula is called a(n) (6).

A chemical change in which two or more substances combine to form a more complex substance is called a(n) (7) reaction. A change in which a substance is broken down into simpler substances is called a(n) (8) reaction. If the change is caused by heat supplied to the reaction, the Greek symbol (9) is often written above the "yields" symbol in the equation.

A chemical change in which a free element replaces and releases another element in a compound is called a(n) (10) reaction. A chemical change in which there is an exchange of ions between two compounds is called a(n) (11) reaction. A solid substance produced by such a reaction in a liquid medium is called a(n) (12).

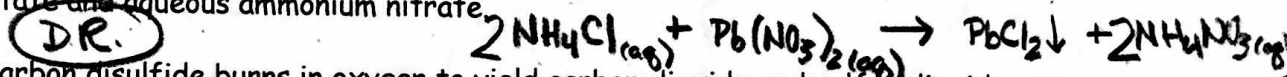
1. chemical reaction
2. chemical equation
3. arrow
4. reactant
5. product
6. coefficient
7. synthesis
8. decomposition
9. delta Δ
10. single replacement
11. double replacement
12. precipitate

IDENTIFY THE TYPE OF REACTION AND BALANCE THE EQUATION:

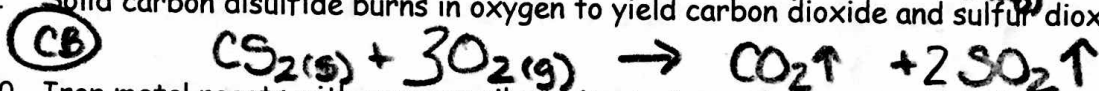
- S 1. $2\text{Sb} + 3\text{I}_2 \rightarrow 2\text{SbI}_3$
 SR 2. $2\text{Li} + 2\text{H}_2\text{O} \rightarrow 2\text{LiOH} + \text{H}_2$
 D 3. $2\text{AlCl}_3 \rightarrow 2\text{Al} + 3\text{Cl}_2$
 CB 4. $\text{C}_6\text{H}_{12} + 9\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$
 DR 5. $2\text{AlCl}_3 + 3\text{Na}_2\text{CO}_3 \rightarrow \text{Al}_2(\text{CO}_3)_3 + 6\text{NaCl}$
 DR 6. $2\text{HNO}_3 + \text{Ba}(\text{OH})_2 \rightarrow \text{Ba}(\text{NO}_3)_2 + 2\text{H}_2\text{O}$
 SR 7. $2\text{Al} + 3\text{Pb}(\text{NO}_3)_2 \rightarrow 2\text{Al}(\text{NO}_3)_3 + 3\text{Pb}$

IDENTIFY THE TYPE OF REACTION & WRITE A BALANCED EQUATION (INCL. STATES):

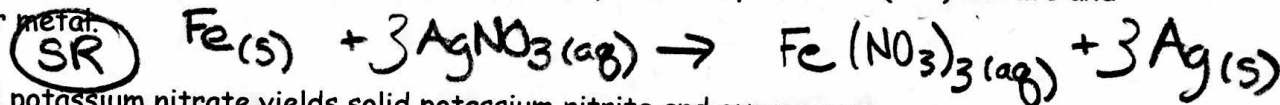
8. Aqueous solutions of ammonium chloride and lead(II) nitrate produce lead(II) chloride precipitate and aqueous ammonium nitrate.



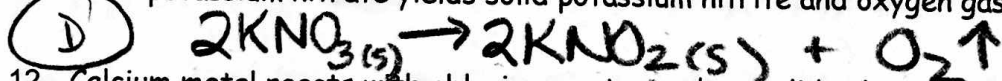
9. Solid carbon disulfide burns in oxygen to yield carbon dioxide and sulfur dioxide gases.



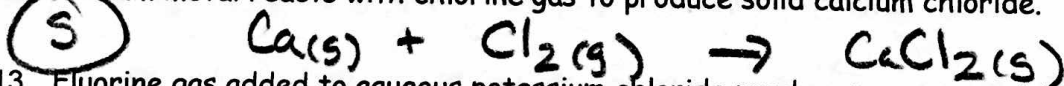
10. Iron metal reacts with aqueous silver nitrate to produce aqueous iron(III) nitrate and silver metal.



11. Solid potassium nitrate yields solid potassium nitrite and oxygen gas.



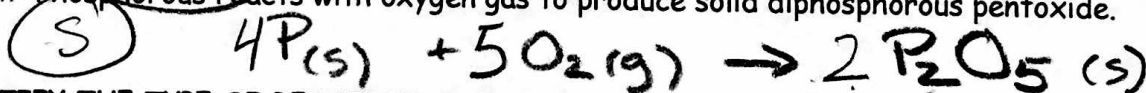
12. Calcium metal reacts with chlorine gas to produce solid calcium chloride.



13. Fluorine gas added to aqueous potassium chloride produces aqueous potassium fluoride and chlorine gas.



14. Phosphorous reacts with oxygen gas to produce solid diphosphorous pentoxide.



IDENTIFY THE TYPE OF REACTION, PREDICT THE PRODUCTS (STATES NOT REQUIRED), AND BALANCE THE EQUATION:

- SR 15. $\text{Al}(\text{s}) + \text{NaOH}(\text{aq}) \rightarrow \text{NO REACTION}$
 C 16. $\text{C}_2\text{H}_4(\text{g}) + 3\text{O}_2(\text{g}) \rightarrow 2\text{CO}_2 + 2\text{H}_2\text{O}$
 DR 17. $\text{FeCl}_2(\text{aq}) + \text{K}_2\text{S}(\text{aq}) \rightarrow \text{FeS}\downarrow + 2\text{KCl}(\text{aq})$
 S 18. $2\text{Ba}(\text{s}) + \text{O}_2(\text{g}) \rightarrow 2\text{BaO}(\text{s})$
 DR 19. $\text{NH}_4\text{NO}_3(\text{aq}) + \text{NaCl}(\text{aq}) \rightarrow \text{NH}_4\text{Cl}(\text{aq}) + \text{NaNO}_3(\text{aq})$
 D 20. $\text{SO}_2(\text{g}) \rightarrow \text{S}(\text{s}) + \text{O}_2\uparrow$