

Chemistry 11

Chemical Reactions

132
33

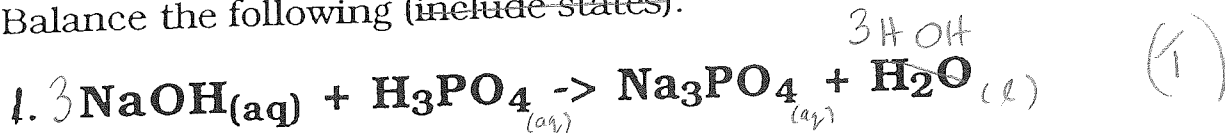
Name: KEY
Date: _____

Please answer all questions on the test provided. Answers to questions involving calculations should be placed in the bottom right hand corner and they should be underlined.

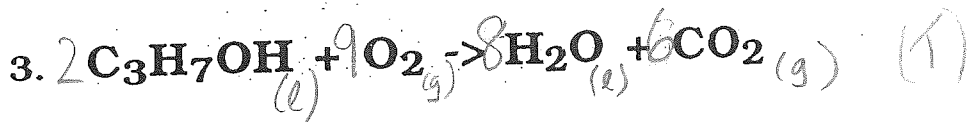
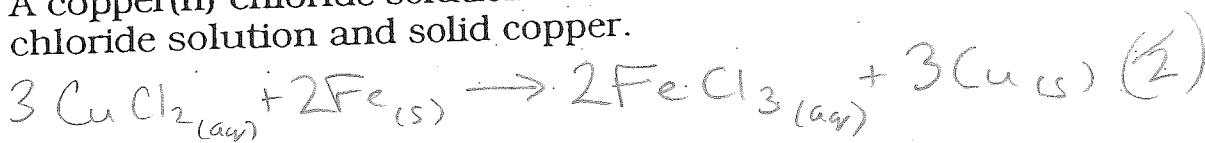
Objective 1: Balancing Chemical Reactions (8 marks)

Balance the following (include states):

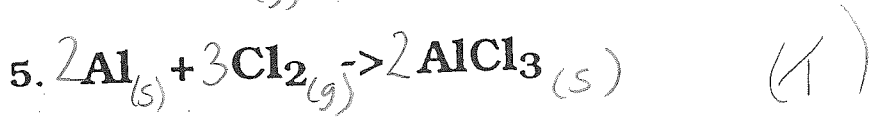
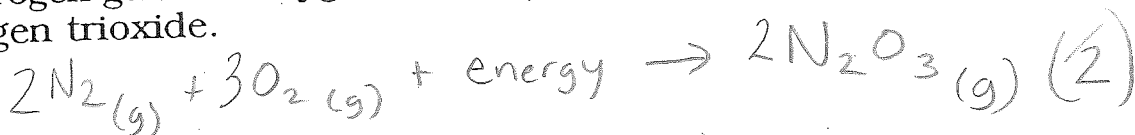
Not necessary



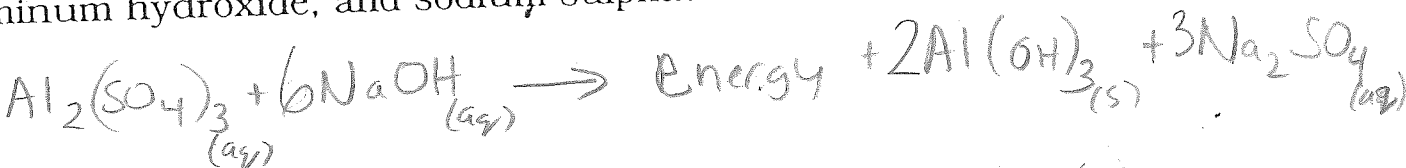
2. A copper(II) chloride solution reacts with solid iron to produce an iron(III) chloride solution and solid copper.



4. Nitrogen gas and oxygen gas and energy react to produce dinitrogen trioxide.



6. Aluminum sulphate reacts with sodium hydroxide to produce heat, solid aluminum hydroxide, and sodium sulphate?



(2)

Objective 2: Classifying reactions (8 marks)

1. Classify the 6 reactions on the previous page (3 marks)

1. Neutralization
2. Single Replacement
3. Combustion
4. Synthesis
5. Synthesis
6. Double Replacement

2. Use the reactivity table to complete question 2. Look at the four reactions below. According to the activity series which reaction(s) will occur? (1 mark)

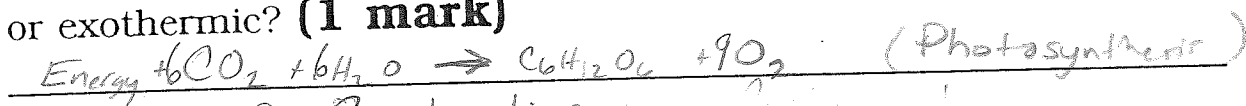
- A. $3\text{Cu(s)} + 2\text{AlCl}_3\text{(aq)} \rightarrow 3\text{CuCl}_2\text{(aq)} + 2\text{Al(s)}$
- B. $\text{Zn(s)} + \text{Fe(NO}_3)_2\text{(aq)} \rightarrow \text{Zn(NO}_3)_2\text{(aq)} + \text{Fe(s)}$
- C. $\text{Zn(s)} + 2\text{NaCl(aq)} \rightarrow \text{ZnCl}_2\text{(aq)} + 2\text{Na(s)}$
- D. $\text{Ca(s)} + \text{Sn(OH)}_2\text{(aq)} \rightarrow \text{Ca(OH)}_2\text{(aq)} + 2\text{Sn(s)}$

↑
* Could be more than one choice!

3. Life on Earth is dependant on the ability of plants to react carbon dioxide with water to produce glucose ($\text{C}_6\text{H}_{12}\text{O}_6$) and oxygen. The reaction requires the energy of the sun in order to occur.

a) Classify the reaction. (1 mark)

b) Is energy a product or a reactant and is this reaction endothermic or exothermic? (1 mark)



a) Combustion

b) Reactant / Endothermic

4. What is meant by the term aqueous (often shown as aq)? (1 mark)

A solid chemical dissolved in water to produce a solution

5. In order to classify a chemical reaction as neutralization, what types of chemicals must be in the reaction? (1 mark)

Acid + Base

Review

- The name of the compound with the formula S_2Cl_4 is:
A. sulfur dichloride
B. sulfur chloride
C. tetrasulfur dichloride
D. disulfur tetrachloride
- The charge on mercury in $Hg_3(PO_4)_2$ is:
A. +1
B. +2
C. +3
D. +6
- How many moles are in **20.0 grams** of calcium?
A. .500 moles
B. 2.00 moles
C. 800.0 moles
D. 0.100 mole
- 0.50 moles** of Au contain:
A. 6.0×10^{23} atoms
B. 3.0×10^{24} atoms
C. 3.0×10^{23} atoms
D. 1.2×10^{24} atoms
- Which of the following is **not** an empirical formula:
A. C_2H_5
B. $C_6H_{12}O_5$
C. C_2H_4O
D. C_3H_6
- What is the concentration of a solution containing **4.0 moles** of NaCl in **2000. mL** of water
A. 1.0M
B. 2.0M
C. 4.0M
D. 8.0M
- How many grams of HCl are required to produce **5.00L** of a **.500M** solution?
A. 3.65g
B. 182g
C. 91.2g
D. 9.12g
- What is the concentration of a solution if **80.0g of NaOH(s)** are dissolved in **100. mL** of water
A. 0.200M
B. 2.00M
C. 20.0M
D. 800M