

Criterion A: Knowledge and Understanding				
(0)	Beginning (1-2)	Developing (3-4)	Accomplished (5-6)	Exemplary (7-8)
<i>I have not achieved a standard described by any of the descriptors to the right.</i>	<p><i>I am able to:</i> state scientific knowledge</p> <p>apply scientific knowledge and understanding to suggest solutions to problems set in familiar situations</p> <p>interpret information to make judgments.</p>	<p><i>I am able to:</i> outline scientific knowledge</p> <p>apply scientific knowledge and understanding to solve problems set in familiar situations</p> <p>interpret information to make scientifically supported judgments.</p>	<p><i>I am able to:</i> describe scientific knowledge</p> <p>apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations</p> <p>analyse information to make scientifically supported judgments.</p>	<p><i>I am able to:</i> explain scientific knowledge</p> <p>apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations</p> <p>analyse and evaluate information to make scientifically supported judgments.</p>

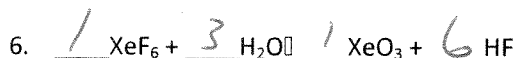
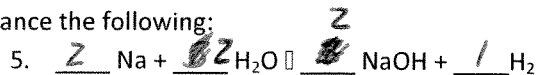
Section A – knowledge and recall, solving familiar problems.

If you answer most of the questions in this section correctly you will achieve **level 4 on Criterion A**

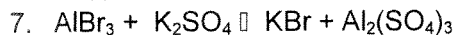
- A 1. Which of the following correctly describes the Law of Conservation of Mass?
- During a chemical change, the mass of products equals the mass of the reactants.
 - During a chemical change, the mass of reactants remains constant.
 - During a chemical change, the mass of each type of molecules is the same.
 - During a chemical change, the mass of products remains constant.
- B 2. If the **reactants** in a sealed container have a mass of **124.5g** and a synthesis reaction occurs. What happens to the mass?
- increases
 - stays the same
 - depends on the type of reactants
 - decreases
- D 3. Which of the following would **increase** the rate of reaction?
- Decrease the temperature
 - Decrease the surface area
 - Add more products
 - Increase the concentration
4. Match the following reaction types with their definitions

A. Single Replacement	<u>D</u> two elements will react and form one compound
B. Decomposition	<u>A</u> one metal will take the place of another during the reaction
C. Double Replacement	<u>C</u> two compounds will react and the element will switch partners
D. Synthesis	<u>B</u> one compound will break down into two or more

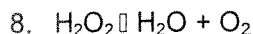
Balance the following:



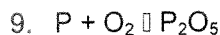
Write the type of each reaction: (no need to balance)



Type: DOUBLE REP.

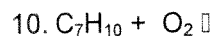


Type: DECOMPOSITION

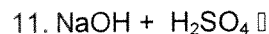


Type: SYNTHESIS

Predict the products and write the type of each reaction: (no need to balance)



Type: COMBUSTION



Type: ACID-BASE NEUT.

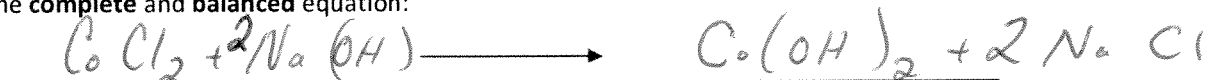
Section B – Solving unfamiliar problems.

If you answer most of the questions in this section (and in sections A and B) correctly you will achieve level 8 on Criterion A.

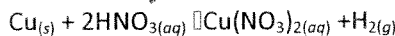
12. Cobalt (II) chloride and sodium hydroxide react...

What **type** of reaction proceeds? DOUBLE REP.

Write out the **complete** and **balanced** equation:



13. Suggest **3 specific** ways to **increase** the rate of the following reaction: (the copper is in the form of a block). Be sure to include a detailed description of what you would do.

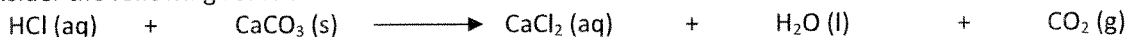


a. CONCENTRATION ↑ OF NITRIC ACID

b. INCREASE TEMPERATURE OF SOLUTION

c. _____

14. Consider the following reaction:



a. Explain what two types of reactions must take place to create those products. Explain your choice of reaction types.

ACID BASE NEUTRALIZATION

AND

DOUBLE REPLACEMENT

b. A 4.0 g sample of CaCO_3 was placed in a beaker containing HCl. After 40 sec, the sample was removed from the acid and weighed. Its new mass was 2.0 g. Calculate the rate of the reaction in $\text{g CaCO}_3/\text{s}$

$2 \rightarrow \frac{2000 \text{ mg}}{40 \text{ sec}}$

50 mg/sec

OR
 0.05 g/s