Name \_\_\_\_\_

## **Chemistry 11**

## Chemical Equation Balancing

1. Balance the following equations.

a. 
$$NH_3 + O_2 \rightarrow NO + H_2O$$

b. 
$$(NH_4)_2C_2O_4 + AlCl_3 \rightarrow Al_2(C_2O_4)_3 + NH_4Cl$$

c. 
$$C_{13}H_{28} + O_2 \rightarrow CO_2 + H_2O$$

d. Fe + 
$$H_2SO_4$$
  $\rightarrow$   $Fe_2(SO_4)_3$  +  $H_2$ 

e. 
$$P_4$$
 +  $Cl_2$   $\rightarrow$   $PCl_5$ 

f. 
$$Na_2Cr_2O_7 + HCl \rightarrow NaCl + CrCl_3 + H_2O + Cl_2$$

g. 
$$H_3PO_4 + Ca(OH)_2 \rightarrow Ca_3(PO_4)_2 + H_2O$$

h. 
$$Ba(CH_3COO)_2 \rightarrow Ba + C + H_2 + O_2$$

i. 
$$C_6H_{13}OH + O_2 \rightarrow CO_2 + H_2O$$

j. 
$$MgSO_4$$
:6 $H_2O \rightarrow MgSO_4 + H_2O$ 

- 2. Write a balanced chemical equation for each of the following. Don't forget *diatomic* elements! (2 marks each = 24 marks)
  - a. aluminum metal reacts with bromine to form aluminum bromide

Answer\_\_\_\_\_

b. hydrochloric acid neutralizes aluminum hydroxide to form water & aluminum chloride

Answer\_\_\_\_

Chemis c.	hexane $(C_6H_{14})$ burns in oxygen to produce carbon dioxide and water
	Answer
d.	carbon dioxide and water are reacted to produce glucose ( $C_6H_{12}O_6$ ) and oxygen in photosynthesis
	Answer
e.	aluminum nitrate reacts with lithium sulphate to form aluminum sulphate and lithium nitrate
	Answer
f.	ammonia and phosphoric acid react to form ammonium phosphate  Answer
g.	nitrogen dioxide reacts with water to form nitric acid and nitrogen monoxide
	Answer
h.	bromine reacts with sodium iodide to produce iodine and sodium bromide
	Answer
i.	calcium reacts in water to produce hydrogen gas and calcium hydroxide
	Answer
j.	butanol (C <sub>4</sub> H <sub>9</sub> OH) burns in oxygen to produce carbon dioxide and water
	Answer_
k.	hydrogen peroxide decomposes to form water and oxygen gas
	Answer
1.	aluminum bromide reacts with ammonium dichromate to produce aluminum dichromate and ammonium bromide
	Answer_