

# Bridging Booklet

ANSWER BOOKLET



**KEEP  
CALM  
AND  
STUDY  
CHEMISTRY**

**Task 1**

Ionic or Covalently bonded

- a)
- b)
- c)
- d)
- e)

**Task 2**

**Drawing out**

**Dot/ Cross diagram**

**Atoms to Ions**

1) Aluminium Oxide

2) Lithium Oxide

3) Barium Nitride

**Task 3 (HINT Use Appendix I to help)**

Put the final answer in the box provided

1) Silver chloride

2) Lithium sulphate

3) Ammonium Hydroxide

4) Potassium Dichromate

5) Iron (II) Nitrate

**Task 4**

Elements in compounds

1)  $\text{AgNO}_3$ 2)  $\text{PbCO}_3$ 3)  $\text{SnCl}_2$ 4)  $\text{Mg(OH)}_2$

**Task 5**

Dot / Cross

Line diagrams

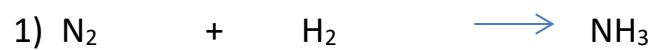
1) Ethane  $C_2H_6$ 2) Propene  $C_3H_6$ 3) Hydrogen Peroxide  $H_2O_2$ 4) Hydrogen Sulphide  $H_2S$

**Task 6**

Research on melting points Na-Mg-Al

**Task 7**

Balancing equations



**Task 8**

Moles in the following:

1) 59 g of cobalt

2) 4.14 g of lead

3) 1.08g of gold

**Task 9**

Moles in these compounds:

1) 62 g of sodium Oxide  $\text{Na}_2\text{O}$ 2) 174 g of lithium bromide  $\text{LiBr}$ 

3) 3.2 g of oxygen

4) 1.24 g of Ammonia

**Task 10**

Calculate the mass of:

- 1) Mass of 2 moles of calcium metal

- 2) 0.25 moles of lead carbonate  $\text{PbCO}_3$

- 3) The formula mass of a compound which has 0.5 moles of mass 14g

**Task 11**

- a)

- b)

- c)

- d)

**Task 12**

1) Calculate the moles in 40 ml of 5M of sodium hydroxide solution

2) What is the concentration when you dissolve 2 moles water

3) How many moles are their in 500ml of 0.1 mol/dm<sup>3</sup> of salt solution

4) What is the concentration of 0.25 moles of alkali in 25 ml

**Task 13**

1) How many grams of potassium oxide (K<sub>2</sub>O) are needed to make 100ml of a 0.5M solution ?

2) What is the concentration of a solution when we dissolve 730g of hydrochloric acid in 350 cm<sup>3</sup>?

3) What is the mass of calcium oxide, CaO needed to make a 250 ml volume of 0.5 M solution?



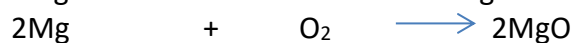
**Task 14**

- 1) Calcium cyanamide  $\text{CaCN}_2$  reacts with water to form calcium carbonate and ammonia



What mass of calcium carbonate is formed if 20g of the  $\text{CaCN}_2$  is reacted with excess water.

- 2) Magnesium burns in air to make magnesium oxide



What mass of magnesium would you need to create 0.8g of magnesium oxide powder.

- 3) Iron reacts with water to form iron oxide and hydrogen



If the student starts with 1.68g of iron and it undergoes a complete reaction

- Number of moles of iron started with?
- Moles of tri Iron oxide formed
- Mass of tri iron oxide formed
- The concentration of this solution if we had 500ml of water in the reaction?



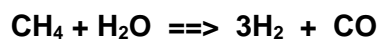
**Task 16**

	Name	Molecular formula	Structural/displayed
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

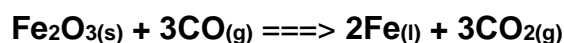
**Task 17**

- 1) Hydrogen is used in synthesising ammonia and is made on a large scale from reacting methane with water

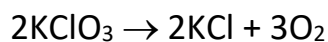
methane + water  $\Rightarrow$  hydrogen + carbon monoxide



- 2) In the blast furnace where we form Iron .

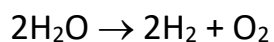
**Task 18**

- 1) When 5.00 g of  $\text{KClO}_3$  is heated it decomposes according to the equation:



- Calculate the theoretical yield of oxygen.
- Give the % yield if 1.78 g of  $\text{O}_2$  is produced.
- How much  $\text{O}_2$  would be produced if the percentage yield was 78.5%?

- 2) The electrolysis of water forms  $\text{H}_2$  and  $\text{O}_2$ .



What is the % yield of  $\text{O}_2$  if 12.3 g of  $\text{O}_2$  is produced from the decomposition of 14.0 g  $\text{H}_2\text{O}$ ?