

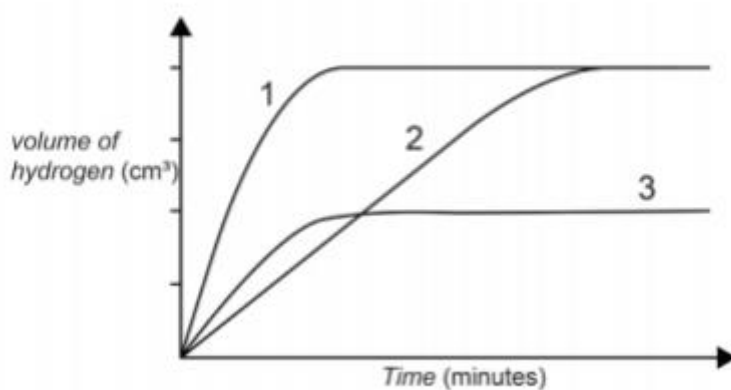
N5 Unit 1

C level

Practice Test 2

1. A pupil carried some experiments between zinc and excess hydrochloric acid
The graph shows the results of the experiments

The graph shows the results of each experiment.



- (a) Which experiment was the slowest finish 1, 2 or 3
(b) In all three experiments the pupil kept the temperature and mass of zinc the same.

2g of zinc was used in experiment 3

What mass of zinc was used in experiment 1?

(c) in another experiment the pupil measured the volume of gas produced over 80 seconds. The results are shown

Time (s)	Volume of gas (cm ³)
0	0
10	12
20	22
30	30
40	36
50	40
60	42
70	44
80	44

- (i) Calculate the average rate in cm³ s⁻¹ at which gas is produced between 10 and 20 seconds
- (ii) Predict the volume of gas, in cm³, which would have been given off after 90 seconds.

2. In a sample of chlorine there are two different types of chlorine atom

35	27
Cl	Cl
17	17

- (a) What word is used to describe these two different types of chlorine atom
- (b) Complete the table below for the chlorine atom

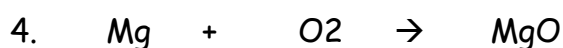
Type of atom	Number of protons	Number of neutrons
35		
Cl		
17		

- (c) The relative atomic mass of chlorine is 35.5 to one decimal place
what mass number of the most common type of atom in this
sample?

3. The table contains information about some substances

Substance	Melting Point (°C)	Boiling Point (°C)	Conductivity as a solid	Conductivity as a liquid
1	1034	2763	yes	yes
2	1726	2785	no	no
3	-54	-14	no	no
4	956	1429	no	yes

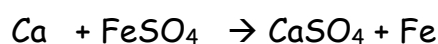
- (a) Identify the covalent molecule
(b) Identify the ionic compound



- (a) Balance the above equation
(b) Calculate the formula mass of magnesium oxide MgO
(c) The gram formula mass of magnesium is 24.5g
Calculate the mass, in g, of 0.20 moles of magnesium
(d) Is magnesium oxide soluble in water. You may wish to use the data
booklet to help you

5. Calcium can be used to extract iron from iron (II) sulfate solution

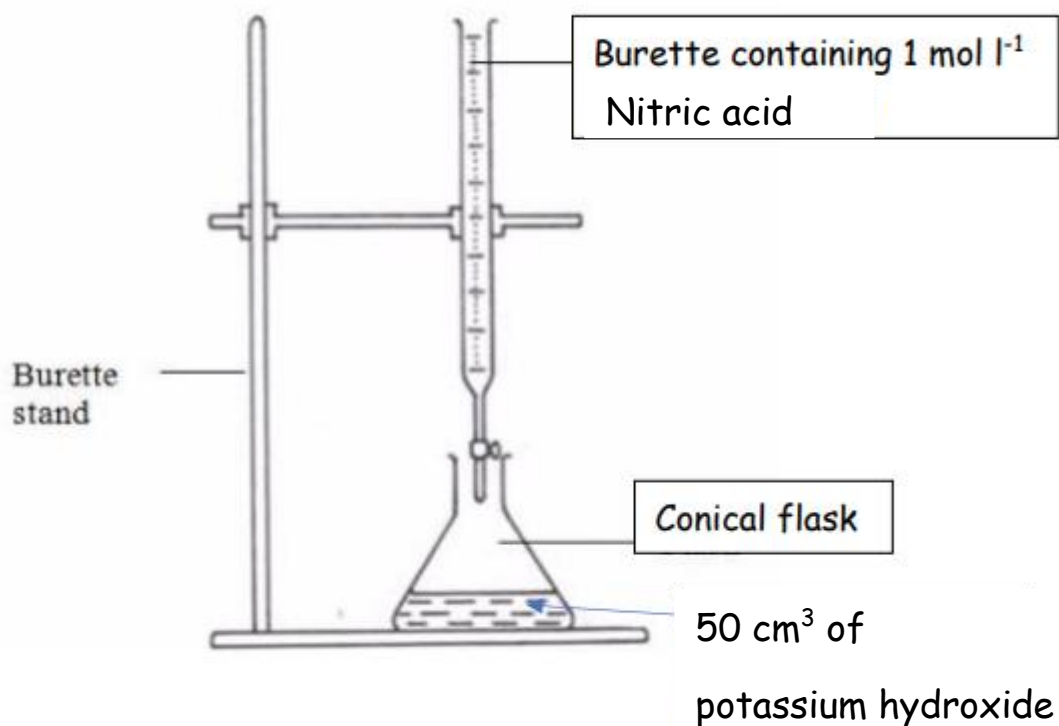
The equation for the chemical reaction is



400 cm³ of 0.2 mol l⁻¹ of iron(II) sulfate solution was reacted with
excess calcium

Calculate the number of moles of iron (II) sulfate used

6. Potassium nitrate can be produced by titrating potassium hydroxide solution with dilute nitric acid



State what happens to the concentration of the hydroxide ions $\text{OH}^- (\text{aq})$ as the titration proceeds

7. Carbon dioxide dissolves naturally in rain water to produce carbonic acid

(a) Circle the correct phrase to complete the sentence

Compared with pure water, rain contains

A lower
A higher
The same

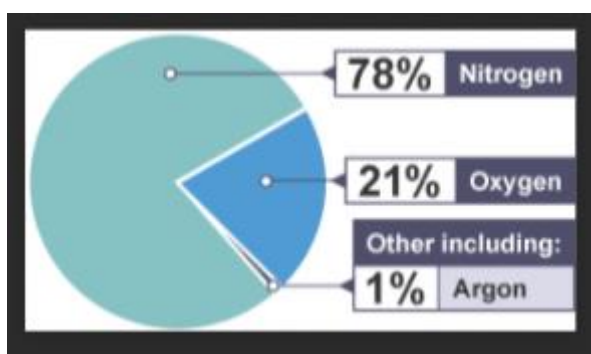
concentration of hydrogen ions

(b) The table shows information about the solubility of carbon dioxide

Temperature (°C)	0	10	20	30	40
Solubility of carbon dioxide in cm ³ per gram of H ₂ O	3.4	2.5	1.6	1.3	1.0

Describe the relationship between the solubility of carbon dioxide and temperature

(c) Composition of air by percentage



The total volume of air sample as 450 cm³

Calculate the volume of oxygen present in the air sample