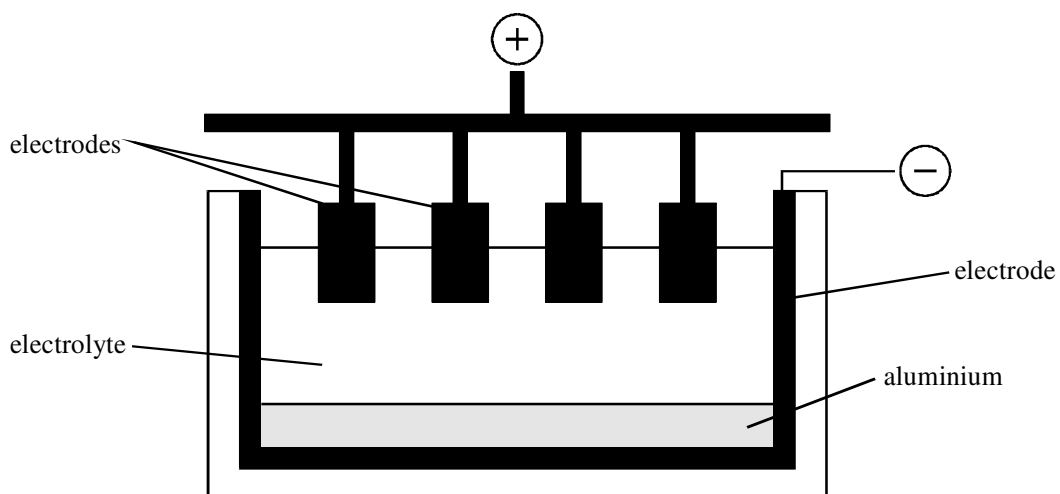


1. (a) The apparatus used to extract aluminium from aluminium oxide is shown.



(i) Name the process used to extract aluminium.

..... (1)

(ii) What is the state of the aluminium oxide in this apparatus?

..... (1)

(b) Aluminium is often used in the form of an alloy.

(i) What is an **alloy**?

..... (1)

(ii) Why is an aluminium alloy more useful than pure aluminium?

..... (1)

(iii) Aluminium alloys can be used to make stepladders and parts of aeroplanes. Give **two** reasons why aluminium alloys are better than steel for these uses.

.....  
.....  
..... (2)

(Total 6 marks)

2. Here is a list of gases.

**carbon dioxide**

**chlorine**

**hydrogen**

**nitrogen**

**sulphur dioxide**

- (a) Use these gases to answer the following questions.  
Each gas may be used once, more than once or not at all.

From the list:

- (i) name a halogen;

.....

(1)

- (ii) name the gas which makes up most of the Earth's atmosphere.

.....

(1)

- (b) The gas which forms about 20% of the Earth's atmosphere is **not** found in the list.

- (i) Name this gas.

.....

(1)

- (ii) Why is this gas important to animals?

.....

.....

(1)

- (c) Millions of years ago, the Earth's atmosphere was mainly steam.  
Today, there is much less steam in the atmosphere.  
Explain what has happened to the steam.

.....

.....

.....

.....

(2)

**(Total 6 marks)**

3. (a) Circle the correct formula for each of the following gases.

water vapour	HO	H <sub>2</sub> O	HO <sub>2</sub>
nitrogen	N	N <sub>2</sub>	N <sub>3</sub>
carbon monoxide	CO	C <sub>2</sub> O	CO <sub>2</sub>

(3)

(b) Millions of years ago, the atmosphere contained:

<b>carbon dioxide</b>	<b>carbon monoxide</b>	<b>hydrogen</b>
<b>nitrogen</b>	<b>water vapour</b>	

(i) What originally produced these gases?

.....

(1)

(ii) The amounts of these gases have changed over millions of years.  
State **two** of these gases which have decreased.

1. ....

2. ....

(2)

(iii) Name the gas, **not** on the list, which now makes up about 20% of the atmosphere.

.....

(1)

(c) Describe a test for carbon dioxide.

.....

.....

.....

.....

(2)

(d) Photosynthesis changes the amount of oxygen and carbon dioxide in the atmosphere.  
How does photosynthesis change the amount of:

(i) oxygen; .....

(1)

(ii) carbon dioxide? .....

(1)

**(Total 11 marks)**