Electricity and Chemistry

Question Paper 2

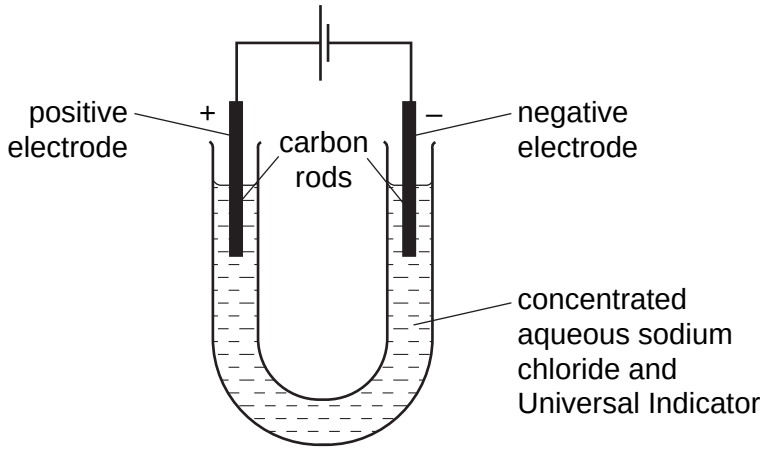
Level	IGCSE
Subject	Chemistry
Exam Board	CIE
Topic	Electricity and Chemistry
Sub-Topic	
Paper Type	Alternative to Practical
Booklet	Question Paper 2

Time Allowed: **44 minutes**

Score: **/36**

Percentage: **/100**

1 Electricity was passed through a concentrated solution of sodium chloride containing Universal Indicator.



(a) Suggest a suitable material for the electrodes.

.....[1]

Three observations were noted:

1 Bubbles of gas seen immediately at the negative electrode.
2 Bubbles of gas formed after some time at the positive electrode.
3 The solution turned blue around the negative electrode and colourless near the positive electrode.

(b) Give a test to show that the gas observed in 1 is hydrogen.

test .....

result .....[2]

(c) Suggest why bubbles of gas were not seen immediately in 2.

.....

.....[1]

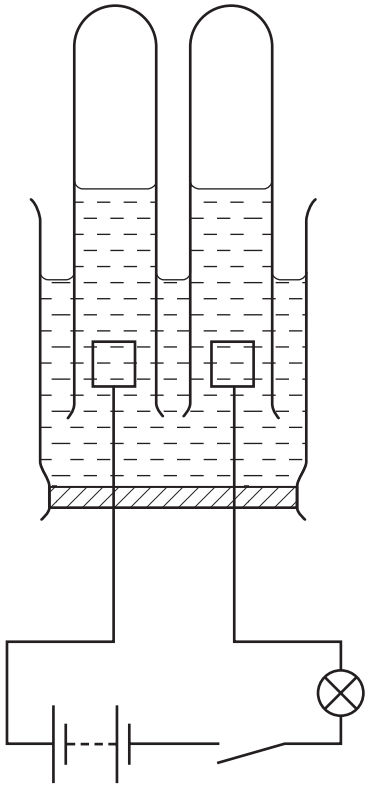
(d) What causes the colour change in 3 at

the negative electrode, ...

the positive electrode? .....[2]

[Total: 6]

2 Concentrated hydrochloric acid can be electrolysed using the apparatus shown.



(a) Label the position of the electrodes on the diagram. [1]

(b) Give two observations when the circuit is switched on.

1 .....

2 ..... [2]

(c) **(i)** Name the product at the positive electrode.

..... [1]

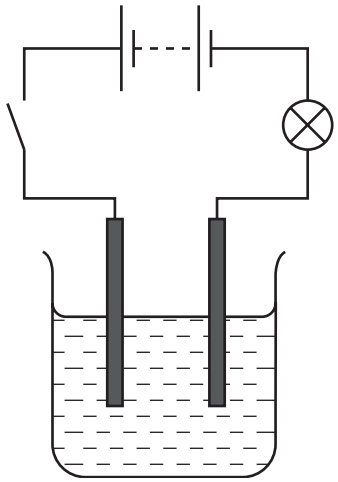
(ii) State a test for this product and the result of the test.

test .....

result ..... [2]

[Total: 6]

3 The diagram shows the apparatus used to find out the effect of an electric current on a concentrated aqueous solution of sodium chloride.



(a) On the diagram label the electrodes [1]

(b) Give three observations when the circuit is switched on.

1 .....

2 .....

3 ..... [3]

(c) **(i)** Name the product at the positive electrode (anode).

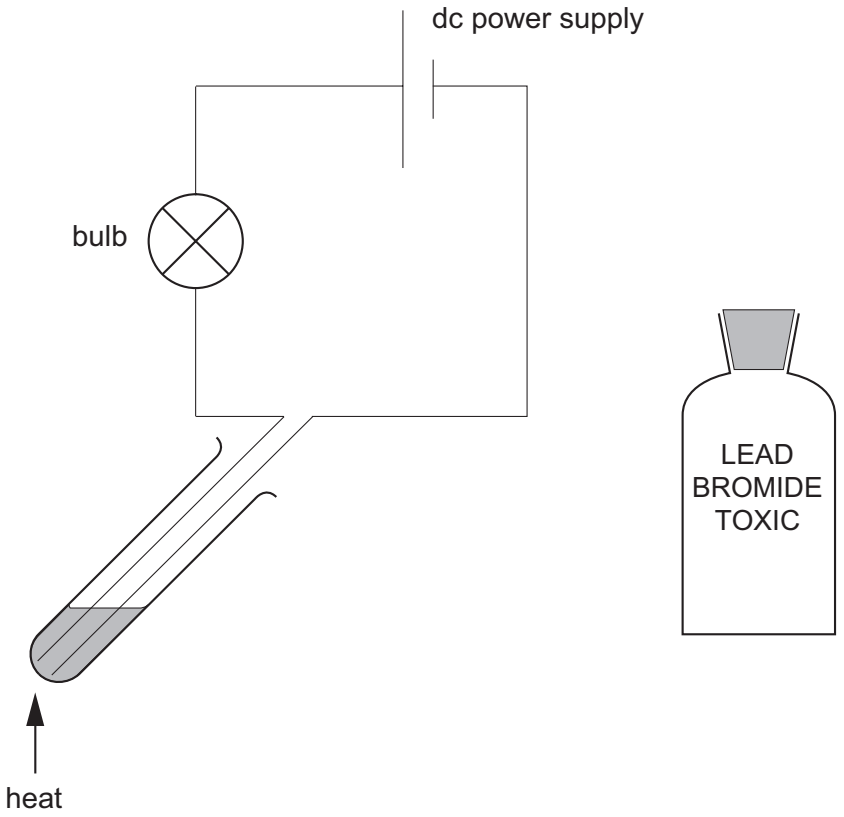
..... [1]

(ii) State a test for this product and the result of the test.

test .....

result ..... [2]

4 Lead bromide was placed in a tube and connected to an electrical circuit as shown below.



The lead bromide was heated until molten. A brown gas was given off.

(a) State one other expected observation.

.....

[1]

(b) **(i)** Suggest a suitable material for the electrodes.

.....

(ii) Indicate on the diagram the negative electrode (cathode). [2]

(c) Name the brown gas. At what electrode will the gas be given off?

name .....

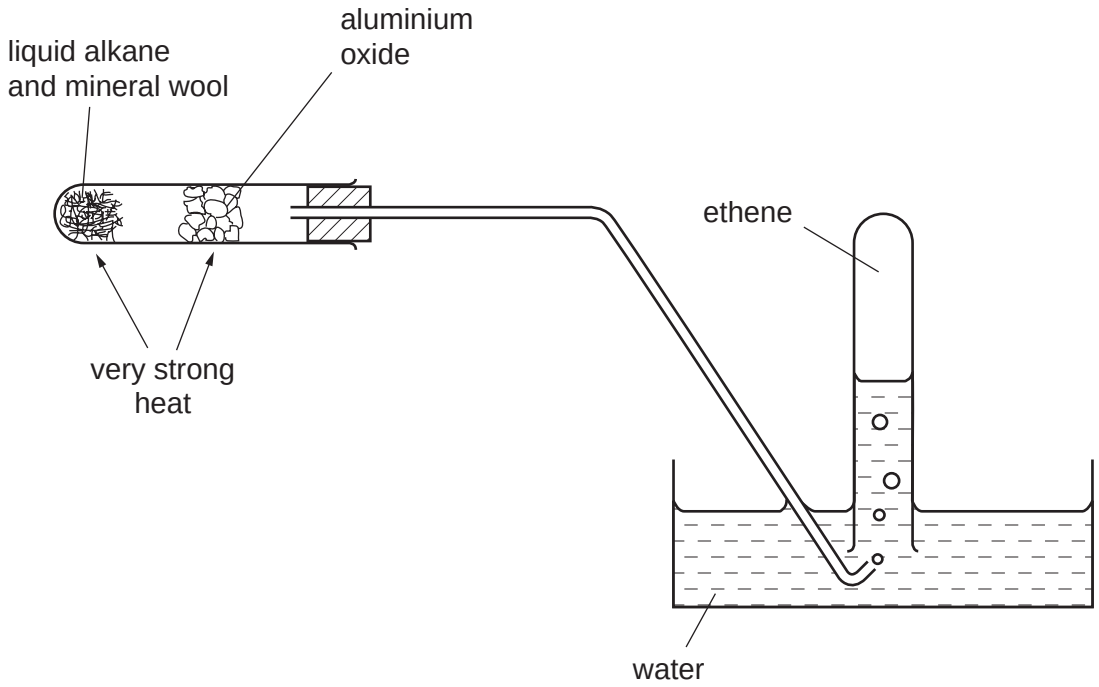
electrode ..... [2]

(d) Why is this experiment carried out in a fume cupboard?

.....

[1]

5 A liquid alkane was passed over heated aluminium oxide to make ethene.



(a) What is the purpose of the mineral wool?

.....

[1]

(b) What is this type of chemical reaction called?

.....

[1]

(c) Give a test for ethene.

test .....

result ..... [2]

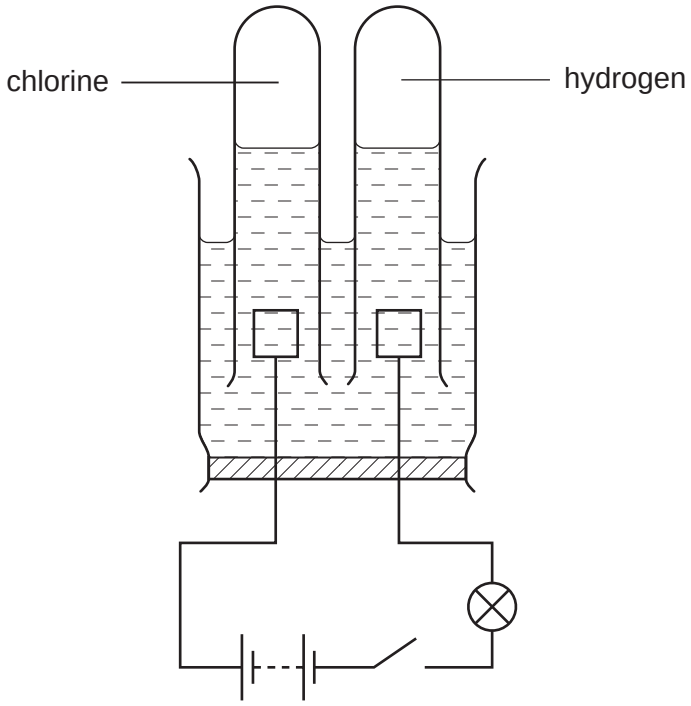
(d) What precaution should be taken in the experiment when the heat is removed? Explain.

.....

.....

..... [2]

6 The diagram shows the apparatus used to pass an electric current through concentrated hydrochloric acid.



(a) Label the electrodes. [1]

(b) Give two observations when the current is switched on.

1 .....

2 ..... [2]

(c) Give a test for the product at the negative electrode (cathode).

test .....

result ..... [2]