

# Electricity and Chemistry

## Question Paper 2

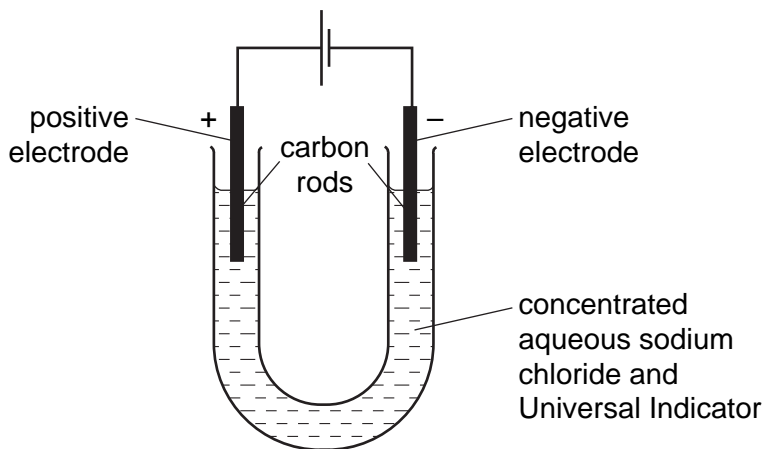
<b>Level</b>	IGCSE
<b>Subject</b>	Chemistry
<b>Exam Board</b>	CIE
<b>Topic</b>	Electricity and Chemistry
<b>Sub-Topic</b>	
<b>Paper Type</b>	Alternative to Practical
<b>Booklet</b>	Question Paper 2

**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]

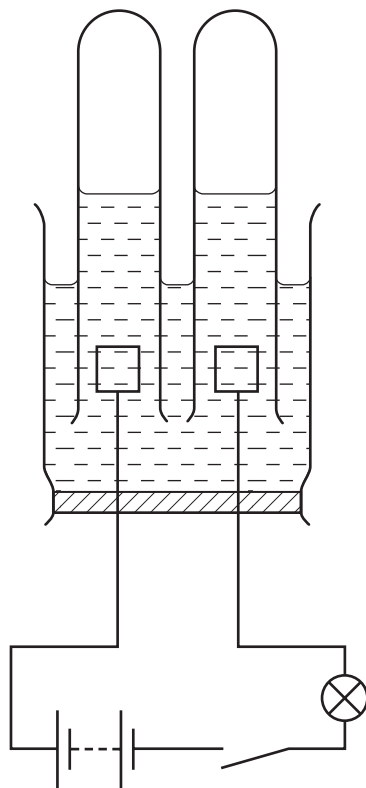
- (d) What causes the colour change in 3 at

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 ..... [1]
- 2 ..... [2]

(c) (i) Name the product at the positive electrode. [1]

.....

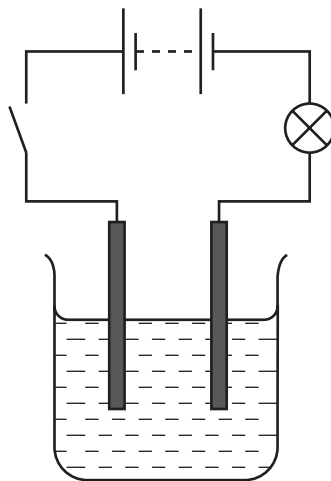
(ii) State a test for this product and the result of the test.

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).

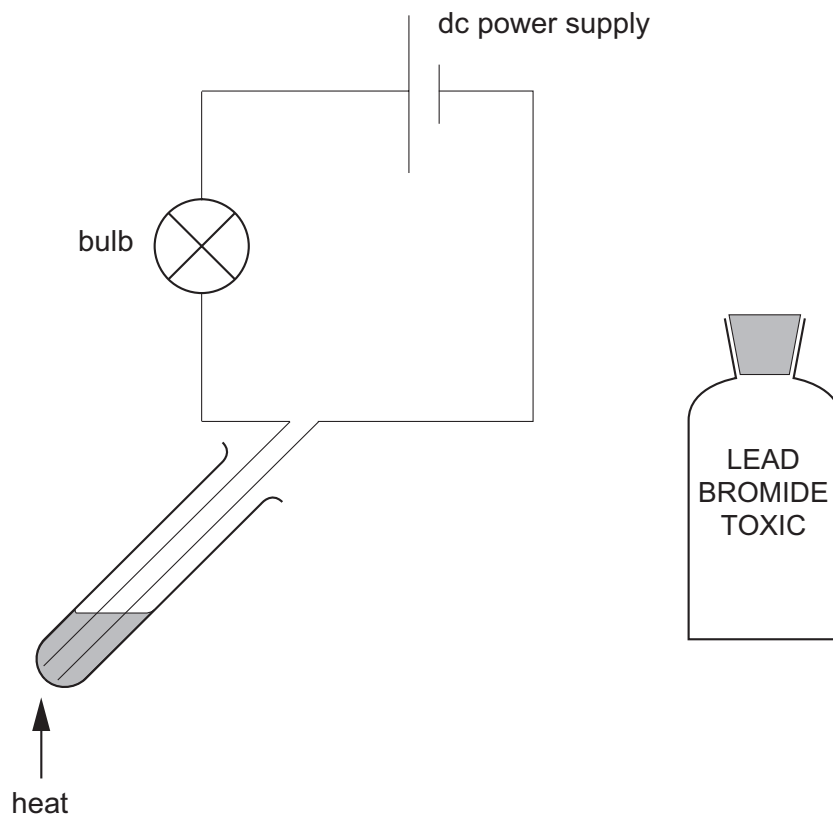
..... [1]

(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?

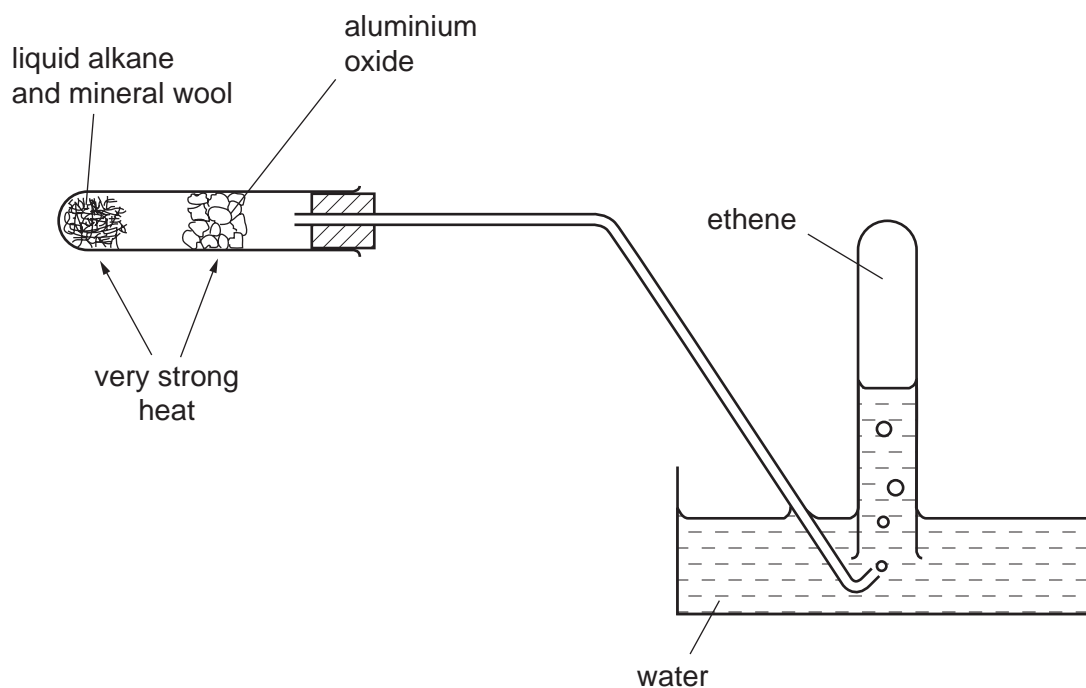
name .....

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.

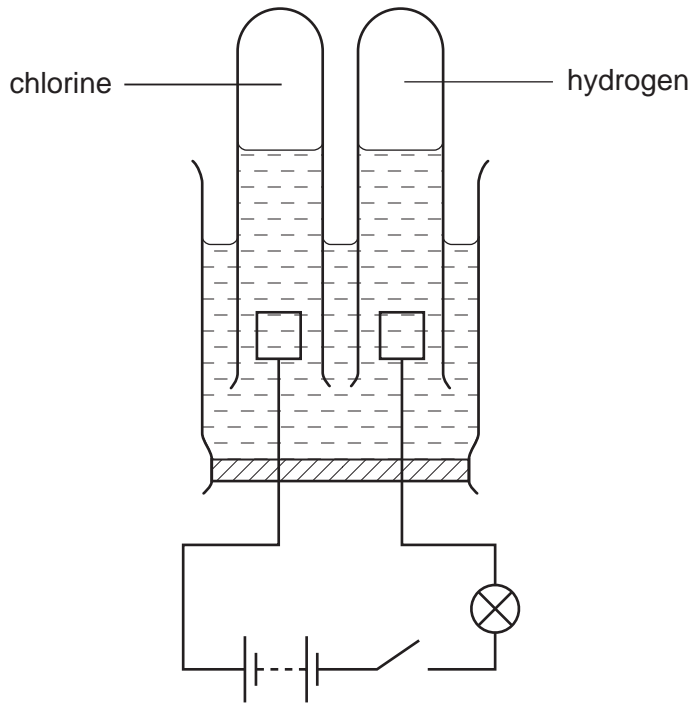
test .....

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]