



General Certificate of Secondary Education
2009–2010

Centre Number

71	
----	--

Candidate Number

--

Science: Double Award (Modular)

Using Materials and Understanding Reactions
End of Module Test
Foundation Tier

B

[GDB01]

THURSDAY 20 MAY 2010, MORNING



TIME

45 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Answer **all thirteen** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
A Data Leaflet, which includes a Periodic Table of the elements, is provided for your use.

For Examiner's
use only

Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	

Total
Marks

--

6 This question is all about hard water. Place a tick (✓) in the box beside each correct answer.

(a) Hard water is water which will not easily form a lather with:

detergent

soap

bleach

[1]

(b) Hard water causes hot water pipes:

to burst

to fur up

to rust

[1]

(c) Hard water may be softened by using:

an acid

an alkali

washing soda

[1]

(d) Which one of the following is **not** an advantage of hard water?

Good for bones and teeth

May prevent heart disease

May prevent kidney failure

[1]

Examiner Only

Marks

Remark

8 This question is about aluminium.

- (a) Complete the table below which gives the number of protons, neutrons and electrons present in an aluminium atom, ${}_{13}^{27}\text{Al}$.

	${}_{13}^{27}\text{Al}$
Number of protons	
Number of neutrons	
Number of electrons	

[3]

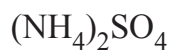
- (b) What is the electronic structure of the aluminium atom?

_____ [1]

Examiner Only

Marks Remark

10 Ammonium sulphate has the chemical formula



Use this information to answer the following questions.
You may find your Data Leaflet helpful.

- (a)** How many different elements are present in a molecule of ammonium sulphate?

_____ [1]

- (b)** How many hydrogen atoms are present in a molecule of ammonium sulphate?

_____ [1]

- (c)** What is the charge on the ammonium ion?

_____ [1]

- (d)** Write the formula for ammonium carbonate.

_____ [1]

Examiner Only

Marks

Remark

- 12 The table below shows the solubility of different gases in water at different temperatures.

Gas	Solubility/100 g water at		
	0°C	20°C	40°C
Oxygen	0.07	0.04	0.03
Nitrogen	0.03	0.02	0.01
Carbon dioxide	0.34	0.17	0.10

- (a) Which of the three gases is the **least** soluble in water at 20°C?

_____ [1]

- (b) Complete the sentence below.

The solubility of gases _____
as the temperature increases. [1]

- (c) Fizzy drinks contain dissolved carbon dioxide.
If you want the drink to stay fizzy you should keep it?
Tick (✓) the correct box.

in the fridge

at room temperature

in a warmer room

it doesn't matter where it is kept

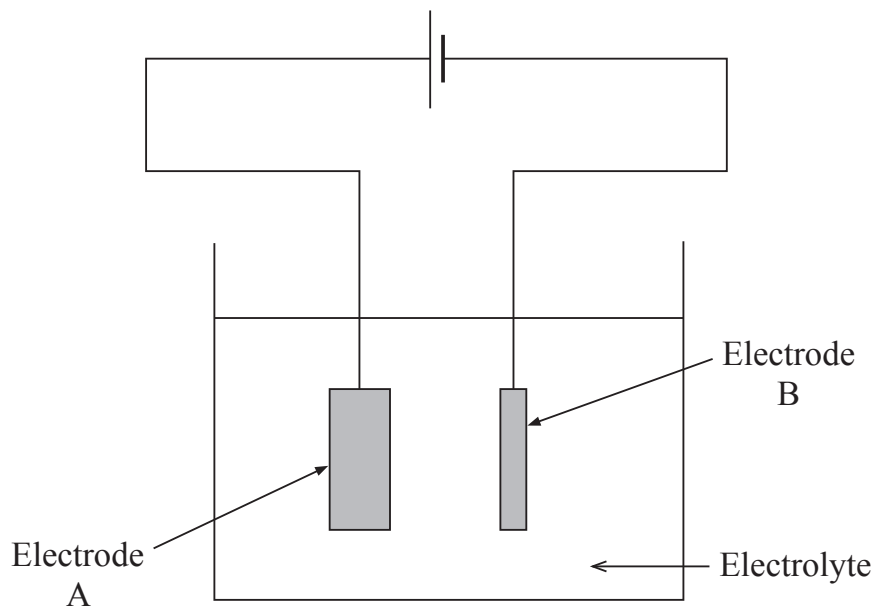
[1]

Examiner Only

Marks

Remark

13 Copper can be purified by the process of electrolysis.



Circle the correct answer in each part below.

(a) Electrode B is made from:

pure copper **impure copper** **platinum** [1]

(b) A suitable substance for the electrolyte would be:

sulphuric acid **copper sulphate** **water** [1]

(c) Pure copper is formed:

at the anode **at the cathode** **in solution** [1]

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

Permission to reproduce all copyright material has been applied for.
In some cases, efforts to contact copyright holders may have been unsuccessful and CCEA
will be happy to rectify any omissions of acknowledgement in future if notified.