



Rewarding Learning

General Certificate of Secondary Education  
2011–2012

**Science: Single Award (Modular)**

Chemical Patterns and our Environment

Module 3

Higher Tier

[GSC32]

WEDNESDAY 9 NOVEMBER 2011

9.15 am–10.00 am



Centre Number

71	
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Candidate Number

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**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 six** questions.

**INFORMATION FOR CANDIDATES**

The total mark for this paper is 45.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

A Data Leaflet is provided for use with this paper .

For Examiner's use only

Question Number	Marks
1	
2	
3	
4	
5	
6	

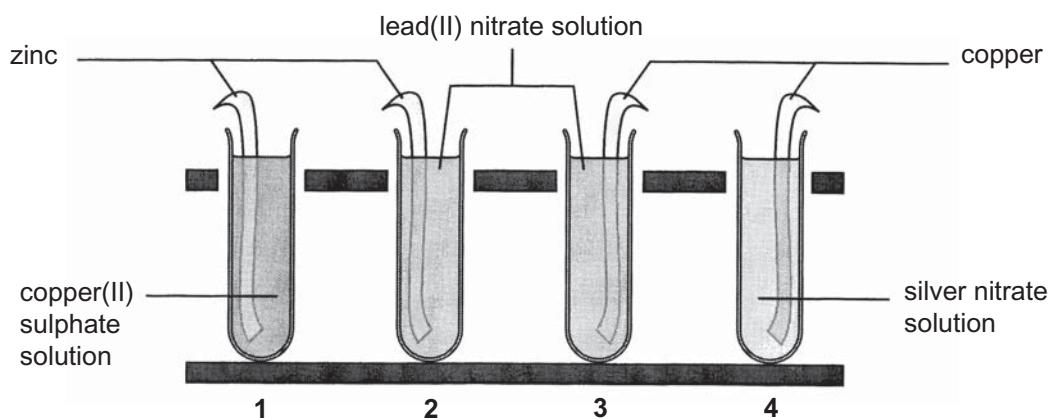
<b>Total Marks</b>	
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- 2 The diagram below shows four solutions into which strips of metal were placed.



After several hours the following results were obtained.

**Test tube 1:** solution lost its blue colour and a reddish brown deposit was seen on the metal strip.

**Test tube 2:** solution remained colourless and a greyish white deposit was seen on the metal strip.

**Test tube 3:** solution remained colourless and the metal strip remained shiny with no deposit.

**Test tube 4:** solution turned blue and a deposit was seen on the metal strip.

Use this information to answer the following questions.

(a) Why are reactions like these described as displacement reactions?

\_\_\_\_\_ [1]

(b) Name the reddish brown deposit formed on the zinc in test tube 1.

\_\_\_\_\_ [1]

(c) Why did the solution lose its blue colour in test tube 1?

\_\_\_\_\_ [1]

Examiner Only

Marks Remark

(d) Explain fully the result for test tube 3.

\_\_\_\_\_  
\_\_\_\_\_ [2]

(e) Two products were formed in test tube 4. Name these two products.

\_\_\_\_\_ and \_\_\_\_\_ [2]

(f) Which of the metals involved is the least reactive?

Circle the correct answer.

**copper   zinc   lead   silver** [1]

(g) Explain fully why sodium would not be a suitable metal for this experiment.

\_\_\_\_\_  
\_\_\_\_\_ [2]

Examiner Only

Marks Remark









6 Indigestion is caused when there is too much acid in the stomach.

One of the substances used to treat indigestion is called Milk of Magnesia.

(a) The chemical name for this product is magnesium hydroxide,  $\text{Mg}(\text{OH})_2$ .

How many different elements are present in this compound?

\_\_\_\_\_ [1]

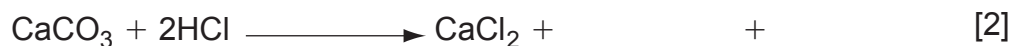
(b) When used to treat indigestion, name the type of chemical reaction that takes place in the stomach.

\_\_\_\_\_ [1]

(c) Complete and balance the symbol equation for this reaction.



(d) Tablets containing calcium carbonate can also be used to relieve indigestion. Complete the symbol equation below.



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**THIS IS THE END OF THE QUESTION PAPER**

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Examiner Only

Marks Remark





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