

Centre Number			
71			

General Certificate of Secondary Education 2010–2011

Science: Double Award (Modular)

Using Materials and Understanding Reactions End of Module Test

Foundation Tier

B

[GDB01]

WEDNESDAY 10 NOVEMBER 2010, AFTERNOON



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 twelve** 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 Exa	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

Tatal	
Total	
Mante	
Marks	



1 The labels below could be found on bottles of bleach.

Examiner Only			
Marks	Remark		



Label A
© Crown copyright

May be harmful if swallowed

Label B

(a)	Give two reasons why the hazard symbol in Label A is better than the
	wording in Label B.

1. _____

2. _____

______[2]

Each of the worded labels below could be improved by turning it into a hazard symbol.

(b) Draw a diagram in each empty box to show the correct hazard symbol.

(i)

This liquid is toxic

[1]

(ii)

This gas is explosive

[1]

2. Pour in hot milk. 3. Stir to dissolve the cocoa powder. 4. Add sugar to taste. 5. Stir to dissolve the sugar. 1) Name the solvent used in this recipe. [1] 2) Give two reasons why the cocoa should dissolve quickly if this recipe is followed carefully. [2] Then more sugar is added a saturated solution is formed.	ne recipe for a not milky drink is given below. Read it carefully an aswer the questions which follow.	() Examin Marks
5. Stir to dissolve the sugar. (a) Name the solvent used in this recipe. [1] (b) Give two reasons why the cocoa should dissolve quickly if this recipe is followed carefully. [2] (b) When more sugar is added a saturated solution is formed. (c) What is meant by the term saturated solution?	Place two teaspoons of cocoa powder into a large mug.	
4. Add sugar to taste. 5. Stir to dissolve the sugar. a) Name the solvent used in this recipe. [1] b) Give two reasons why the cocoa should dissolve quickly if this recipe is followed carefully. [2] When more sugar is added a saturated solution is formed. c) What is meant by the term saturated solution?	2. Pour in hot milk.	
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	When more sugar is added a saturated solution is formed.	
	c) What is meant by the term saturated solution?	
[1]		
		[1]

2

CO	oper and aluminium are both metals. They have different uses.		Examiner Marks R
(a)	Give two reasons why cooking foil is made from aluminium.		
	Image of aluminium foil is not available due to copyright		
	1		
	2		
(b)	Give two reasons why hot water tanks are made from copper.	[2]	
	Image of copper hot water tank is not available due to copyright		
	1		
	2		

Both aluminium and copper are used to make saucepans.

Examiner Only			
Marks	Remark		

(c) Give **two** reasons why saucepans are not made from plastic such as polyethene.



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1.				

2			
/ .			

Read the following passage carefully and then answer the questions which follow.		Examiner Marks R	Only lemark
Common names for substances can be misleading. Pencil lead is actugraphite, which is a form of carbon, not lead. Tin foil is made from aluminium, not tin. Dry ice is not solid water but solid carbon dioxide. When we think of salt we usually mean sodium chloride but sea salt contains many different compounds.	ıally		
From the passage give the name of:			
(a) a non-metallic element			
	[1]		
(b) a metallic element			
	[1]		
(c) an ionic compound			
	[1]		
One of the compounds in sea salt contains the elements potassium ar iodine only.	nd		
(d) Give the name for this compound.			
	[1]		

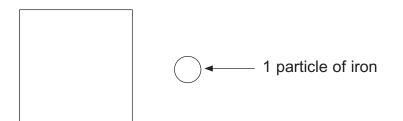
4

5	The photograph below shows a blacksmith shaping a piece of solid iron
	into a horseshoe.

Examiner Only			
Marks	Remark		

Image of blacksmith at work not available due to copyright.

(a) Fill in the box below to show how the particles are arranged in solid iron.



[1]

(b) What happens to the particles in solid iron as the blacksmith heats the horseshoe in the fire?

______[2]

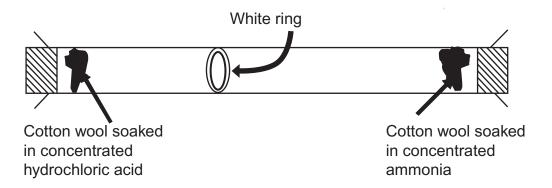
(c) The blacksmith uses coal as a fuel for the fire.

Complete the word equation below showing the products formed when coal burns in air.

[2]

i In	parts of Northern Ireland the water is described as hard .	Examiner Only Marks Remark
(a)	What effect has hard water on	
	(i) soap?	
	(ii) detergent?	
		_ [2]
(b) Give one method of removing hardness from water.	
		_ [1]
' Th	is question is about chemical formulae.	
Yo	ou may find your Data Leaflet helpful.	
(a)	What is the chemical symbol for potassium?	
(b) Glucose has the formulae C ₆ H ₁₂ O ₆ .	_ [1]
	How many atoms are present in a glucose molecule?	
		_ [1]
(c)	Ethanoic acid has the formula CH ₃ COOH.	
	How many different elements are present in an ethanoic acid molecule?	
		_ [1]
(d	Name the substance whose formula is Ca(HCO ₃) ₂ .	
		_ [1]

The apparatus below is used in a warm room to investigate the movement of particles.



After about 5 minutes, a white ring of ammonium chloride forms.

(a) What word is used to describe the movement of particles shown by using this apparatus?

______[1]

(b) If this experiment was repeated in a **colder** room what effect would this have on the formation of the white ring?

_______[1]

(c) Why is the white ring formed closer to the cotton wool soaked in concentrated hydrochloric acid?

_____ [1]

(d) What is the formula of ammonium chloride? (You may find your Data Leaflet useful.)

_____ [1]

9 The table below shows the atomic number, mass number and electronic arrangement (configuration) of four particles.

Examiner Only			
Marks	Remark		

(a) Complete the table by filling in the blank spaces.

(You will need your Data Leaflet to find the missing mass numbers.)

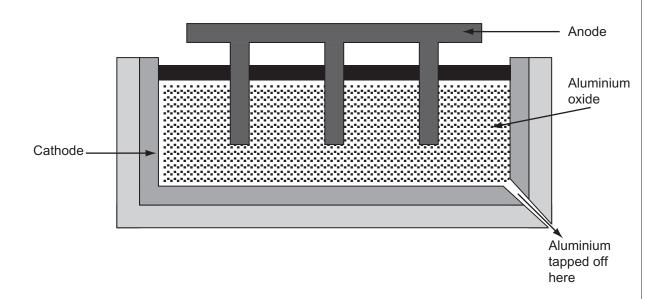
Particle	Atomic Number	Mass Number	Electronic arrangement
А	6		2,4
В	1	2	1
С			2,3
D	1	3	

[4]

(b)	(i)	Which of the particles, A, B, C or D are isotopes?					
		and are isotopes	[1]				
	(ii)	Explain your answer to (b)(i) .					
			— [1]				

10 Aluminium metal is produced by passing electricity through a cell containing molten aluminium oxide.





_____ [1]

(b) Name the substance which is used to make the anode.

______[1]

(c) Give a disadvantage of using this method to produce aluminium.

_____[1]

11	(a)	Copper sulphate is a blue salt which can be prepared by the reaction of an acid with a base.		
		Complete the word equation below by naming the acid, the base and any other substance formed.		
		+ copper + sulphate + [3]		
	(b)	Copper sulphate can also be prepared by the reaction of an acid with a carbonate.		
		What gas is formed when an acid reacts with a carbonate?		
		[1]		

needed to bond with one atom of magnesium.		
	[3]	
THIS IS THE END OF THE QUESTION PAPER		

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