

General Certificate of Secondary Education 2009–2010

Science: Single Award (Modular)

Chemical Patterns and our Environment Module 3

Foundation Tier

[GSC31]

WEDNESDAY 24 FEBRUARY 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 seven** questions.

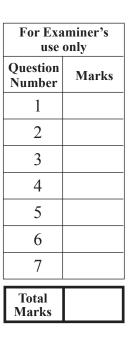
INFORMATION FOR CANDIDATES

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.

Centre Number				
71				

Candidate Number

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The picture below shows a box of dishwasher tablets. 1 Examiner Only Marks Rema TABLETS FOR DISHWASHER hazard symbol (a) What does the hazard symbol shown tell you about the chemical used to make dishwasher tablets? _____[1] (b) In the spaces below draw two more hazard symbols and write the name of the symbol underneath. _____ [4] (c) Give two reasons why hazard symbols and not just words are put on boxes of chemicals. Reason 1 _____ Reason 2 [2]



This drink has a pH of 3.2.

(a) Which ingredient in the drink causes it to have a low pH value?



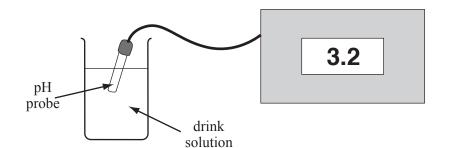
Examiner Only Marks Remar

(b) What colour would you expect it to give with universal indicator paper?

Circle the correct answer.

red	green	orange	blue	purple	[1]
ICu	Siven	orange	biuc	purpic	L+]

(c) The diagram shows a pH probe.



Suggest why a pH probe is better for measuring pH than using universal indicator paper.

[1]

(d) What word describes a solution which has a pH greater than 7?

[1]

3 The photograph shows an active volcano.



© U.S. Geological Survey/photo by George Urlich

(a) Choose words from the list to complete the sentences which follow.

magma : seismograph : lava : tsunami crater : earthquake : nucleus

When two tectonic plates are pulled apart a liquid

called _____ can reach the surface of the earth.

This liquid runs down the outside of the mountain and is now called

The large gap in the centre of a volcano is called a ______.

When a volcano erupts under the sea it can cause a giant wave called a

[4]

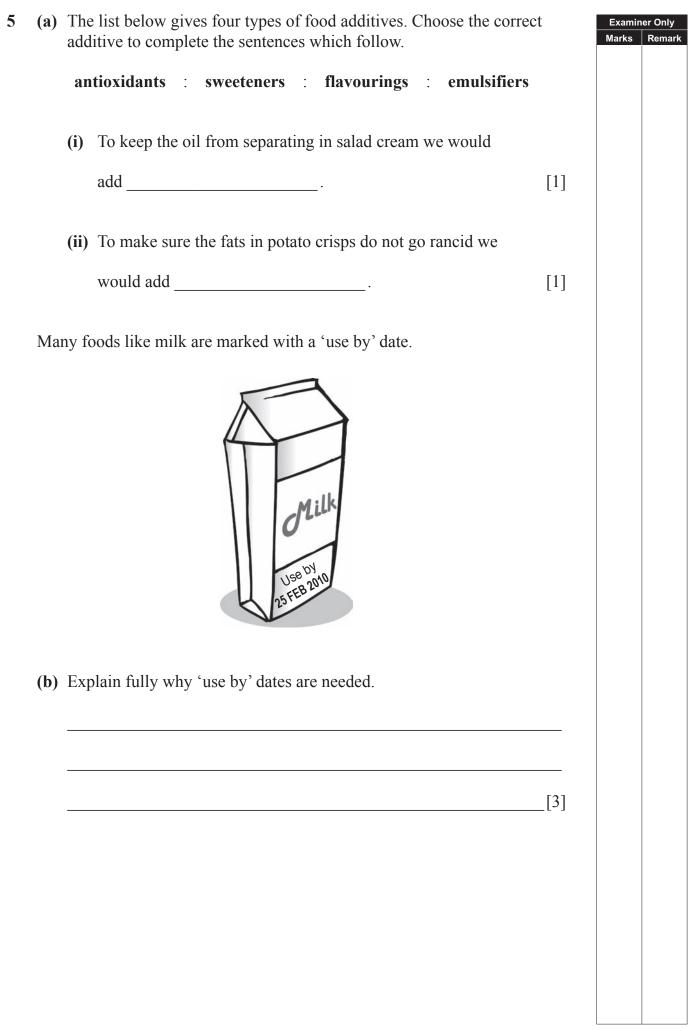
Examiner Only

(b) Describe what can happen when a giant wave hits a coastal town.

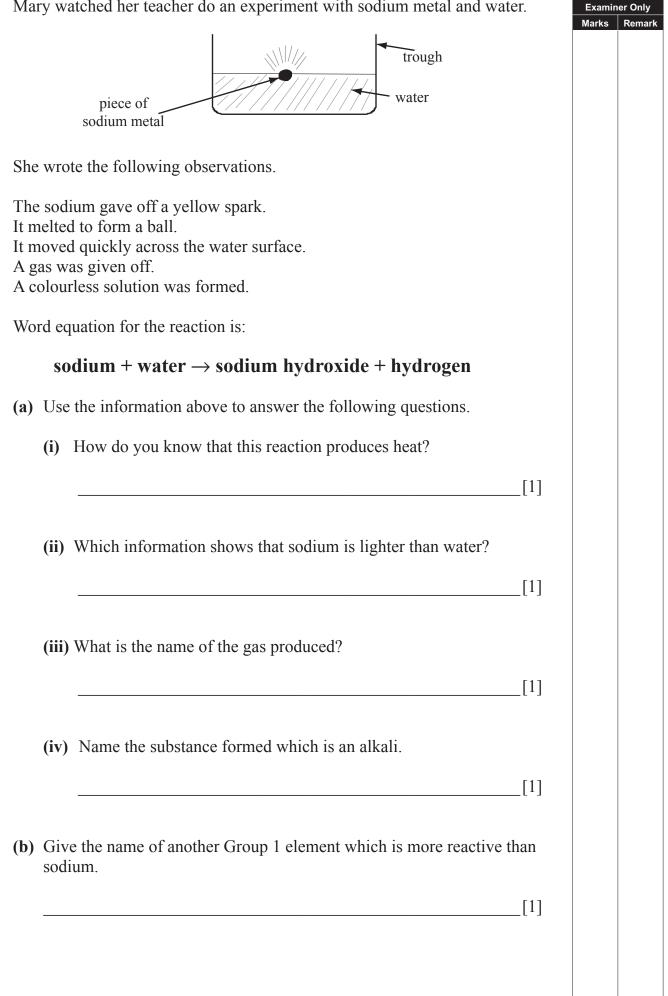
[2]

Examiner Only Marks Rem Proton (a) Use words from the list below to label the diagram. electron : shell : core : neutron : cell [3] (b) What is the **atomic number** for this atom? **Circle** the correct answer. 3 4 10 7 [1] (c) What is meant by the term **mass number**? Choose from: Number of protons + neutrons Number of protons + electrons Number of electrons + neutrons [1] _____ (d) Use your Data Leaflet to find the name and symbol for the element in the diagram. Name _____ Symbol _____ [2]

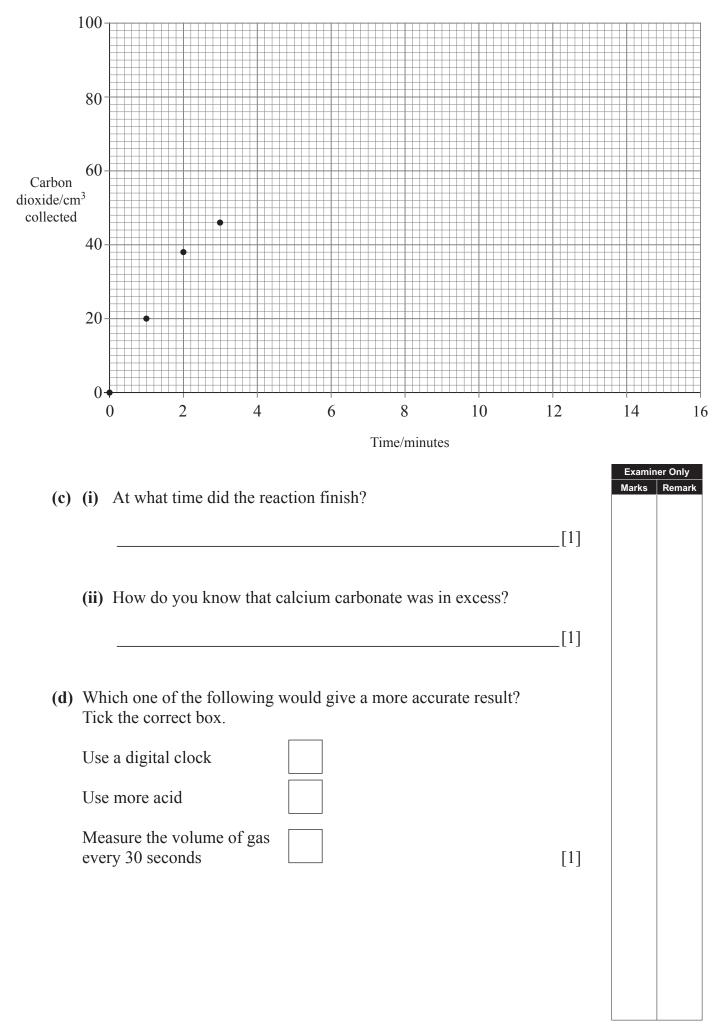
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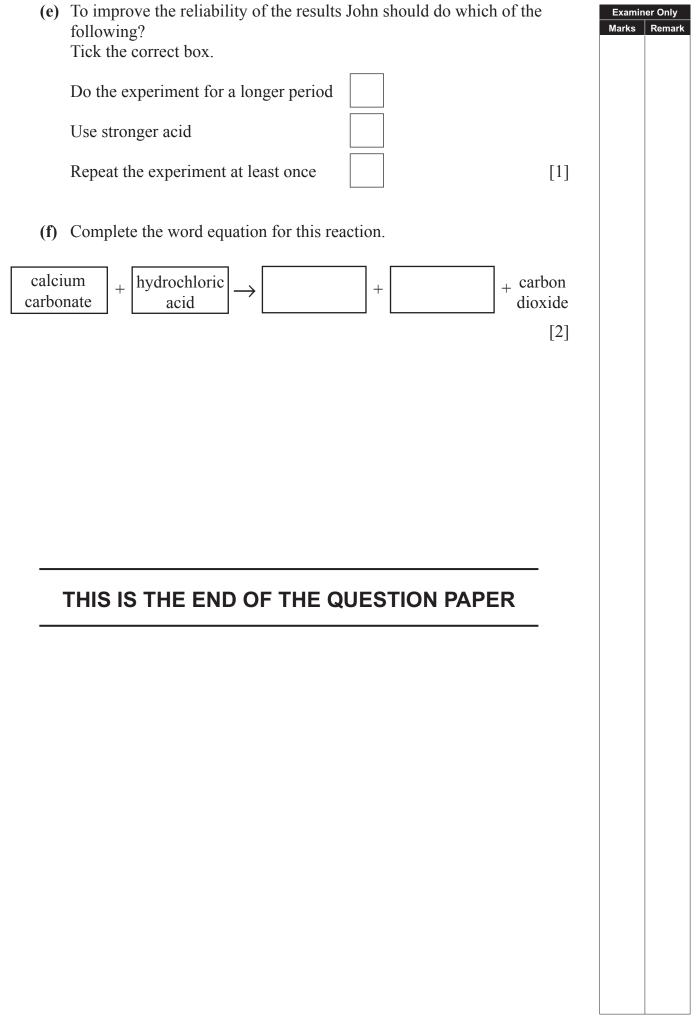


Mary watched her teacher do an experiment with sodium metal and water. 6



The diagram shows the apparatus used to investigate the reaction between a 7 Examiner Only Marks Remar piece of calcium carbonate and dilute hydrochloric acid. gas syringe dilute hydrochloric acid lump of calcium carbonate © CCEA John recorded the total volume of carbon dioxide collected at intervals over 15 minutes. At the end of the reaction there was some calcium carbonate left in the flask. John obtained the following results: **Time/minutes** 0 1 2 3 5 7 9 1 3 5 11 Carbon dioxide/cm³ 0 20 38 46 62 72 78 82 82 82 collected (a) Complete the graph on the page opposite by plotting the remaining points and join these points to form a smooth curve. [3] (b) Describe and explain the shape of the graph over the first two minutes. [2]





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