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NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

SUPERVISOR'S USE ONLY

Level 1 Science, 2011

90944 Demonstrate understanding of aspects of acids and bases

9.30 am Monday 21 November 2011

Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of aspects of acids and bases.	Demonstrate in-depth understanding of aspects of acids and bases.	Demonstrate comprehensive understanding of aspects of acids and bases.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the questions in this booklet.

Pull out Resource Booklet 90944R from the centre of this booklet.

Show ALL working.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–10 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

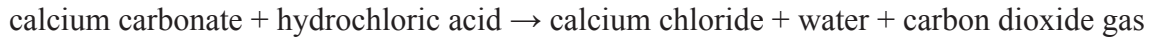
TOTAL

ASSESSOR'S USE ONLY

QUESTION TWO: RATES OF REACTION

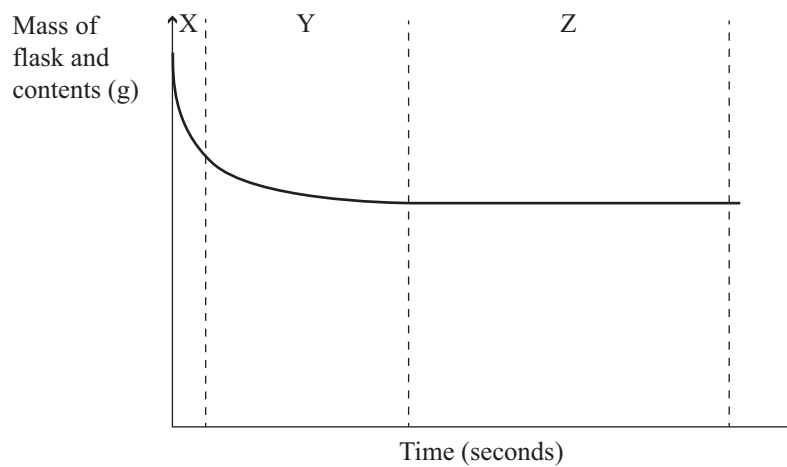
Calcium carbonate (marble chips) and hydrochloric acid react together in a conical flask.

The word equation for this reaction is:



(a) Describe an observation you would make when this reaction occurs.

The mass of the flask and contents is measured on a scale over time and recorded on the graph shown below.



(b) Explain why the mass decreases with time.

In your answer you should:

- consider all the products being formed
- explain what is happening, in terms of particles AND the rate of reaction, in **each** section of the graph.

The mass decreases with time because: _____

In section X: _____

In section Y: _____

In section Z: _____

- (c) When more **concentrated** hydrochloric acid is used, the reaction is faster.

Explain the difference in the rate of reaction.

In your answer you should refer to:

- particles
- collisions
- reaction rate.

QUESTION THREE: MAKING A SALT

A student wanted to make the salt, **magnesium chloride**.

Discuss how the student would make **magnesium chloride** salt from **hydrochloric acid** and **magnesium oxide**.

In your answer you should:

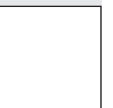

- state what **type** of reaction occurs
- write a word equation AND a balanced symbol equation for the reaction between hydrochloric acid and magnesium oxide
- explain how you would make magnesium chloride in a **school lab** from hydrochloric acid and solid magnesium oxide (this can be done by drawing labelled diagrams).

Type of reaction: _____

Word equation

Balanced symbol equation

Diagrams



Word equation

Balanced symbol equation

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