

**MARK SCHEME for the May/June 2011 question paper
for the guidance of teachers**

5070 CHEMISTRY

5070/32

Paper 3 (Practical Test), maximum raw mark 40

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

Page 2	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	5070

www.PapaCambridge.com

1 (a) Titration

Accuracy 8 marks

For the two best titres give:

4 marks for a value within 0.2 cm³ of Supervisor

2 marks for a value within 0.3 cm³ of Supervisor

1 mark for a value within 0.4 cm³ of Supervisor

Concordance 3 marks

Give:

3 marks if all the ticked values are within 0.2 cm³

2 marks if all the ticked values are within 0.3 cm³

1 mark if all the ticked values are within 0.4 cm³

Average 1 mark

Give 1 mark if the candidate calculates a correct average (error not greater than 0.05) of all the ticked values.

Assuming a 25 cm³ pipette and a titre of 24.8 cm³:

(b) concentration of iodine in P [2]

$$= \frac{24.8 \times 0.1}{2 \times 25} \quad (1)$$

$$= 0.0496 \text{ mol/dm}^3 \quad (1)$$

Answers should be correct to + or – 1 in the third significant figure.

(c) mass of iodine in 1 dm³ of P [1]

$$= 0.0496 \times 254$$

$$= 12.6 \text{ g}$$

(d) amount of iodine present in seaweed [1]

$$= 12.6 \times 1000000 / 15000$$

$$= 840 \text{ ppm}$$

[Total: 16]

Page 3	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	5070

2 R is hydrochloric acid S is sodium hydroxide

Test	Notes
<p>General points For ppt Allow solid, suspension, powder</p> <p>For gases Name of gas requires test to be at least partially correct. Effervesces = bubbles = gas vigorously evolved but not gas evolved</p> <p>Solutions Colourless not equivalent to clear, clear not equivalent to colourless</p>	
Solution R	
<p>Test 1</p> <p>effervescence (1) gas turns limewater milky (1) carbon dioxide (1) solid disappears (1)</p>	
<p>Test 2</p> <p>(a) white ppt (1)</p> <p>(b) soluble in excess (1) colourless solution (1)</p>	
<p>Test 3</p> <p>(a) effervescence (1) gas pops with a lighted splint (1) hydrogen (1) liquid gets hot (1) solid disappears (1)</p> <p>(b) white ppt (1) insoluble in excess (1)</p>	
<p>Test 4</p> <p>white ppt (1) soluble in excess (1) colourless solution (1)</p>	
<p>Test 5</p> <p>(a) green ppt (1) soluble in excess (1) green solution (1)</p> <p>(b) green ppt (1) soluble in excess (1) green solution (1)</p>	

Page 4	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	5070

Test 6	
gas turns damp litmus blue	(1)
ammonia	(1)

Conclusions

- Cation in **R** is hydrogen (indication of gas in test **1** or **3(a)**) (1)
- Anion in **R** is chloride (white ppt in test **2(a)**) (1)
- Anion in **S** is hydroxide (ammonia in test **6** or ppt in test **3(b), 4** or **5**) (1) [3]

Note: 28 marking points, maximum 24.

[Total: 24]