

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Ordinary Level

MARK SCHEME for the May/June 2012 question paper
for the guidance of teachers

5070 CHEMISTRY

5070/42

Paper 4 (Alternative to Practical), maximum raw mark 60

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 2012 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	Paper
	GCE O LEVEL – May/June 2012	5070	42

- 1 (a) pipette (1)
- (b) (i) safety bulb or pipette filler (1)
- (ii) to prevent liquid entering mouth. (1) [3]
- 2 (a) condenser (1) to return reactants to flask, etc. (1)
- (b) (i) ethanol, C_2H_5OH (1)
- (ii) potassium dichromate(VI), $K_2Cr_2O_7$ (1)
orange to green (1)
OR potassium manganate(VII), $KMnO_4$ (1)
purple to colourless (1)
- (iii) electric heater, not Bunsen (1) e.g. flammable alcohol etc. (1)
- (c) (i) ethanoic acid – orange/yellow (1)
sulfuric acid – red (1)
- (ii) a gas / hydrogen is evolved (1)
speed is faster with sulfuric acid as it is a strong acid (1)
OR it is a stronger acid than ethanoic acid (1)
- (d) ethyl ethanoate (1) $CH_3CO_2C_2H_5$ (1) ester (1) [14]
- 3 (a) (i) white ppt./solid (1)
- (ii) filter precipitate (1), wash with water (1) dry the solid (1)
- (b) (i) 0.075 (1)
- (ii) 0.1 (1)
- (iii) 0.075 (1)
- (iv) $233 (1) \times 0.075 = 17.48 \text{ g}$ (1) [9]
- 4 (b) [1]
- 5 (c) [1]
- 6 (b) [1]

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
	GCE O LEVEL – May/June 2012	5070	42

7 (b) [1]

8 (d) [1]

9 (a) 2.69 (1) g

(b) yellow to orange, red, pink. (1)

(c) 25.9 48.6 32.4
 0.0 23.3 7.3
 25.9 25.3 25.1

1 mark for each correct row or column. (3)

Mean value = 25.2 (1) cm³

(d) 0.0024 (1)

(e) 0.0048 (1)

(f) 0.048 (1)

(g) 56 (1)

(h) 56 – 17 = 39 (1) [11]

10 (a) colourless solution (1)

(b) white ppt (1) insoluble in excess (1)

(c) no ppt (1) or slight white ppt (1)

(d) aq. silver nitrate (1) / nitric acid (1) white ppt. (1) [7]

Page 4	Mark Scheme: Teachers' version	Syllabus	Paper
	GCE O LEVEL – May/June 2012	5070	42

11 (a) Temperatures: 56, 35, 24, 15. (1) all correct
Solubilities: 50, 25 (1) both correct.

(b) all points plotted correctly (1)
Smooth curve through the points (1)
Passing through y-axis (1)

(c) (i) 18 (1) g / 100 cm³

(ii) 62 (1) g / 100 cm³

(d) 70 (1) g / 100 cm³ → 44° (1)

(e) 50°C → 86 (1) g / 100 cm³ → 150 – 86 = 64 (1) g

In all appropriate cases read the candidate's graph to the nearest half small square. [11]