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.

All Examiners are instructed that alternative correct answers and unexpected approaches in
candidates’ scripts must be given marks that fairly reflect the relevant knowledge and skills
demonstrated.

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

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

CIE is publishing the mark schemes for the May/June 2007 question papers for most IGCSE, GCE
Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.
1 (a) syringe

(b) \(72 \text{ cm}^3\)

[Total: 2]

2 (a) lime water turns milky

(b) (i) effervescence stopped

(ii) solid remained

(answers must be different in (i) and (ii))

(no precipitates or solubility in answers)

(c) filtration

(d) (iii)

(e) 0.025 moles

(f) \(161 \times 0.025 = 4.025 \text{ g}\)

(g) \(0.6 \text{ dm}^3\)

[Total: 8]

3 (a) (i) bromine, brown gas, colour spreads to fill all the jar

(ii) diffusion

(b) (i) brown to colourless

(ii) it contains a double bond or is unsaturated

(iii) addition

(iv) \(C_3H_6\) (1), propene (1)

(no consequential name mark for incorrect alkene)

[Total: 7]

4 (a)

[Total: 1]

5 (c)

[Total: 1]

6 (c)

[Total: 1]

7 (d)

[Total: 1]
8 (a) 1.51 (g) [1]
(b) pipette [1]
(c) purple or pink to colourless [1]
(d) 25.2 31.1 48.3 mark correct rows OR columns to advantage of candidate. One mark for each correct row OR column (3)
   0.0  6.8  23.8
   25.2 24.3 24.5
mean titre = 24.4 cm$^3$ (4) [4]
(e) 0.00244 (moles) [1]
(f) 0.00244 [1]
(g) 0.0244 [1]
(h) 0.05 [1]
(i) 0.0256 [1]
(j) 0.0128 [1]
(k) 118 [1]
(l) $x = 2$ (1), $= 4$ (1) [2]
(m) (i) $C_2H_5 OOC \ C_2H_4 \ COOC_2H_5$ [1]
   (ii) esters [1] [Total: 18]
9 (a) transition metals or metal ions not present
(Not V is not a transition metal)

(b) (i) white ppt.,
(ii) soluble in excess

(c) (i) aqueous ammonia
(ii) white ppt.
excess aqueous ammonia, soluble in excess
(use of ammonia or ammonium loses first mark)

(d) dilute nitric acid (1), aq. silver nitrate (1) white ppt. (1)

[Total: 9]

10 (a) temperatures – 27.5, 29.9, 32.4, 33.0 all correct
temperature rises – 2.5, 4.9, 7.4, 8.0 all correct

(b) all points plotted correctly (1)
two straight lines drawn in each case intersecting correctly (2)
(points joined by a curve or third straight line in each case, 1 only)
through zero (1)

(c) 0.32 g

(d) 0.56 g

(e) (i) 0.65 g
(ii) 0.70 g

(f) No temperature change or no reaction (1), Ag below Cu in reactivity series or silver does not react with copper(II) sulphate (1)
(any suggestion of a reaction or temperature change loses both marks)

The answers to (c), (d) and (e) are those on the candidate’s graph.
In all cases read to nearest HALF SMALL SQUARE.

[Total: 12]