

**CAMBRIDGE**  
INTERNATIONAL EXAMINATIONS

November 2003

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK: 60

SYLLABUS/COMPONENT: 0620/06

CHEMISTRY  
Alternative to Practical



Page 1	Mark Scheme	Syllabus	Paper
	IGCSE EXAMINATIONS – NOVEMBER 2003	0620	6

Question Number	Question (Including any Source Details)	Part Mark
1 (a)	Boxes labelled clockwise: Condenser (1) Beaker (1) <u>Fractionating</u> column (1)	3
(b)	↑ underneath flask (1)	1
(c)	Fractional (1) distillation (1)	2
2 (a)	Larger surface area (1) Quicker to extract colour/more colour extracted (1) <u>not</u> easier/faster	2
(b)	Reference to ethanol (1)	1
(c)	Reference to flammability of ethanol (1)	1
(d)	To prevent loss of solvent (1) <u>not</u> splash/evaporation	1
(e)	<u>Pour</u> off liquid (1)	1
(f)	Chromatography (1) Apply orange concentrate (1) to paper (1) Use of solvent (1) Description of elution (1) Result of experiment (1)	
	Max 5 – all marks could be obtained from a suitable diagram	5
3	Table. Times read correctly: 4s (1) 8s (1) 14s (1) 30s (1) 82s (1)	5
(a)	Points plotted correctly (3) (-1 for each incorrect) Smooth line graph (1)	4
(b)	Read from graph – should be $\approx 48$ (1) $\pm$ (1) Indication on graph (1)	2 1
(c) (i)	Experiment 1 (1)	1
(ii)	Greatest concentration/amount of bromate (1) Therefore more <u>collisions</u> (1)	2

Page 2	Mark Scheme	Syllabus	Paper
	IGCSE EXAMINATIONS – NOVEMBER 2003	0620	6

Question Number	Question (Including any Source Details)	Part Mark
(d) (i)	Two errors: e.g. use of m cylinder inaccurate (1)/use of timer (1)/detecting when cross not visible	2
(ii)	Improvements: e.g. use of burette (1)/use of computer data logging (1)/use of colourimeter (1) insulate repeat and average	2
4 (b) (i)	Orange/brown (1) Precipitate (1) No change in excess (1)	3
(c)	Orange/brown precipitate (1) No change in excess (1)	2
(f) (i)	Hydrogen (1)	1
(ii)	Reduction/redox/displacement (1) iron (II) formed (1)	2
(g)	Cation – ammonium (1) Anion – sulphate (1)	2
5 (a)	Sodium hydroxide (1)	1
(b)	Ammonium sulphate (1)	1
(c)	Bunsen burner (1)	1
(d)	Reference to reaction (1)	1
(e)	Gas jar wrong way up (1) Gas is less dense than air (1)	2
	Tubes in flask should be evened (1) Liquid would be transferred to gas jar (1)	2
	Also credit in (c)	
6	Weigh coal sample (1) same amount <u>Burn</u> coal (1) Pass gas or diagram to show (1) Through acid/dichromate (1) Use of timer (1) Record time for colour change (1) Repeat/compare with other samples (1)	
	Max 6	6
		<b>Total 60</b>