CAMBRIDGE
INTERNATIONAL EXAMINATIONS

JUNE 2002

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK : 60

SYLLABUS/COMPONENT : 0620/6

CHEMISTRY
(ALTERNATIVE TO PRACTICAL)

UNIVERSITY of CAMBRIDGE
Local Examinations Syndicate

Question Number	Mark Scheme Details	Part Mark
1 (a)	A – (thistle) funnel (1) B – (conical) flask (1) C – gas jar (1)	3
(b)	→ into thistle funnel (1)	1
(c)	limewater (1) milky (1) /cloudy not splint test	2
2 (a) (i)	red /pink (1)	1
(ii)	colour of drink interferes or similar (1)	1
(b)	heat (1) condense (1) / (fractional) distillation (2) /boil /evaporate	2
(c)	chromatography (1) drink applied to paper (1) solvent (1) /water /ethanol only two spots (1) max 3	3

Question Number	Question (including any Source Details)	Part Mark
3 (a)(i)	to keep the magnesium out of contact with acid or similar (1)	1
(ii)	to measure volume of gas (1) not collect	1
(b)	shake the flask/let go cotton (1)	1
(c)	excess - more than enough to react (1)	1
(d)	Grid All points correctly plotted (2) (−1 for each incorrect) smooth line graph (1)	3
(e)(i)	At 2 minutes (1) not on smooth curve (1)	2
(f)	15 cm^3 (±1) (1), indication (1)	2
(g)	curve on/below original graph levelling out at 40 cm^3 (1)	1
4 (a)	bubbles / fizz / water turns cloudy (1) calcium smaller not dissolve /gets hot	1
(b)	gas given off moves the pieces (1)	1
(c)	>7 (1)	1

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5	Table completed: Experiment 1 — 24.9 cm³ ✗; Difference — 24.9 cm³ (1); Experiment 2 — 12.50 cm³ ✓; Difference — 12.50 cm³ (1)	2
(a) (i)	Experiment 1 (1)	1
(ii)	more in Experiment 1 (1), 2× as much / double volume for Expt 2 (1)	2
(iii)	Solution B 2× as concentrated as A	1
(iv)	25.0 (1) cm³ (1) ecf for volume	2
(b)	iron (III) (1)	
	brown precipitate (with sodium hydroxide) (1)	2
(c)	use a burette / pipette to measure the iron(II) ions (1)	
	more accurate (1) not syringe	2

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6 (d) (i)	blue (1) precipitate (1)	2
(ii)	blue precipitate (1) dissolves / soluble (1) / solution deep / royal blue (1)	3
(e)	oxygen (1) / O_2	1
(f)	chlorine (1) / Cl_2	1
(g)	catalyst / oxidising agent (1) transition metal / manganese (1) / oxide max 2 MnO_2 = (2)	2
7 (a)	reagent (1) eg indicator result (1) red in acid, no change in NaCl (aq)	2
(b)	eg bromine (1) decolourise in propene, stays same in propane (1)	2
(c)	barium chloride (1) white precipitate in H_2SO_4 (1) no change in HNO_3	2

Question Number	Mark Scheme Details	Part Mark
8	circuit set up (1) bulb (1) copper key cleaned with sandpaper/steel wool (1) copper key is ~~anode~~ cathode (+) (1) nickel rod is ~~cathode~~ anode (-) (1) } wrong way round = (1) solution of nickel sulphate in beaker (1) All marks could be obtained from a diagram. Max 5	6 5
	Total for paper (Max 60 marks)	60