

Identification of Ions and Gases

Question Paper 8

Level	IGCSE
Subject	Chemistry
Exam Board	CIE
Topic	Acids, Bases and Salts
Sub-Topic	Identification of Ions and Gases
Paper Type	Alternative to Practical
Booklet	Question Paper 8

Time Allowed: 58 minutes

Score: /48

Percentage: /100

1	(a)	Larger surface area (1) Quicker to extract colour/more colour extracted (1) <u>UQ</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 off liquid</u> (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
2		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 = 48 (1) § (1) Indication m graph (1)	2 1
	(c) (i)	Experiment 1 (1)	1
	(ii)	Greatest concentration/amount of bromate (1) Therefore more <u>collisions</u> (1)	2
	(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

3 (b) (i)	Orange/brown (1) Precipitate (1) No change if excess (1)	3
(c)	Orange/brown precipitate (1) No change if excess (1)	2
(f))	Hydrogen (1)	1
(ii)	Reduction/redox/displacement (1) iron (II) formed (1)	2
(g)	Cation - ammonium (1) Anion - sulphate (1)	2

4 (i)	magnesium (1)	1
(ii)	Greatest temperature rise (1) Observation - gas given off rapidly (1) / fastest	2
(iii)	Hydrogen (1)	1
Experiment 2		
	Initial temperature 21 (1)	
	maximum temperature 39 (1)	2

4 (b)	temperature rise (1)	1
(c)	redox / displacement (1)	1
(d)	least copper iron zinc most magnesium (1)	1

4(c)	catches fire / ignites (1)	yellow / blue flame (1) / smoky	2
(d)	yellow (1)	precipitate (1)	2
(e)	cream / white (1)	precipitate (1)	2
(f)	organic (1)	hydrocarbon (1) / alkane / alkene (1)	2

2 max.