Identification of Ions and Gases

Mark Scheme 6

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	Mark Scheme 6

Time Allowed: **51 minutes**

Score: **/42**

Percentage: **/100**

1 **(a** no/little water present/little water implied (1) **[1]**

(b) any value less than 7 (1) **[1]**

(c) chromatography (1) apply to paper (1) use of solvent (1)

description of two yellow spots (1) **[4]**

paper in drink = max 2

2 **(a)** electrodes correctly labelled **[1]**

(b) bubbles at positive/negative electrode (1)

bulb lights up (1) **[2]**

(c) lighted splint (1)

pops (1) **[2]**

3 **(b)** **(i)** white (1)

precipitate (1)

dissolves (1) **[3]**

(ii) white (1)

precipitate (1)

insoluble (1) **[3]**

(c) acid gas/named/hydrated salt **[1]**

(d) not a sulphate (1)

not a halide (1) **[2]**

(e) ammonia **[1]**

(f) nitrate (1)

hydrated/water (1) **[2]**

4	**(a)**	**(i)**	White	**1**	
			Precipitate	**1**	**[2]**
			No change/white precipitate/insoluble in excess	**1**	**[1]**
		(ii)	No/thin precipitate/no reaction	**1**	**[1]**
	(b)		Ammonia	**1**	**[1]**
	(c)		Reference to limewater/test for carbon dioxide	**1**	**[1]**
	(d)		Nitrate	**1**	
			Alkali/hydroxide/oxide	**1**	**[2]**

5	**(a)**	Anhydrous copper sulphate/cobalt chloride	1	
		Goes blue/pink in water, no change for ethanol	1	**[2]**
	(b)	Add indicator/named indicator or CO_3^{2-}/Mg	1	
		Turns red/correct colour in acid, no change for sodium sulphate	1	**[2]**
	(c)	Add silver nitrate	1	
		White precipitate with hydrochloric acid, no change with nitric acid	1	**[2]**

6 **(a) A** measuring cylinder (1)

B flask (1) **(2)**

(b) boxes completed correctly, zinc and hydrochloric acid (1) **(1)**

(c) lighted splint (1) pops (1)

second mark consequential i.e. glowing splint = 0 **(2)**