

Acids, Bases and Salts

Mark Scheme 3

Level	IGCSE
Subject	Chemistry
Exam Board	CIE
Topic	Acids, Bases and Salts
Sub-Topic	
Paper Type	Alternative to Practical
Booklet	Mark Scheme 3

Time Allowed: 53 minutes

Score: /44

Percentage: /100

1 tests on filtrate

(a) colourless (1) [1]
ignore: clear, **not:** white

(b) white (1) precipitate (1)
soluble in excess / dissolves (1) [3]

(c) white precipitate (1)
Insoluble / does not dissolve (1) [2]

(d) white (1) precipitate (1) [2]

(e) no reaction / no change / no precipitate (1) [1]

(g) transition metal / copper (1) carbonate (1) [2]

- 2 (a) straight line drawn with a ruler through all points missing point at pH 5 (1) [1]
- (b) idea of fair test / comparability (1) [1]
- (c) temperature (1) [1]
- (d) the lower the pH the greater the % corrosion / or converse / pH 1 is most corrosive (1) [1]
- (e) 2.5% (1) [1]

- 3 (a)** table of results for Experiment 1
initial, final and difference volume boxes completed correctly (1)
0.0, 38.0 difference 38.0
readings to 1dp (1) [2]
- (b)** table of results for Experiment 2
initial and final boxes completed correctly (1) 10.0, 29.0
difference (1) [2]
- (c)** colourless (1) pink (1) [2]
- (d)** neutralisation / exothermic (1) [1]
- (e)** $2 \times$ volume for Experiment 1 from table / 76 (1) cm^3 (1) [2]
- (f)** reacts with the acid / neutralised (1) less sodium hydroxide needed (1) [2]
- (ii)** volume in **(e)** – volume added in Experiment 2 (1) e.g. $76-19$
correct value (2) e.g. 57 cm^3 [2]
- (iii)** estimate based on **(ii)** answer to **(ii)** / 3 divided into $19 \times 0.1 + 0.3 = 0.4 \text{ g}$ [1]
- (g)** no effect (1)
reason – reaction not affected by temperature (1) [2]
- (h)** more accurate (1) than a measuring cylinder (1) [2]
- (ii)** no effect / advantage (1) not measuring temperature changes (1) [2]

- 4 (a) pestle (1) mortar (1) [2]
- (b) stir/mix/shake (1) allow: heat/boil [1]
- (c) diagram showing funnel (1)
indication of filter paper (1) note: labels not necessary [2]
- (d) heat/evaporation (1)
to crystallising point or description (1)
in fume cupboard (1) max 2 [2]
- (e) melting point/description of (1) **allow**: chromatography **ignore**: bp [1]

[Total: 8]