

Metals

Mark Scheme 4

Level	IGCSE
Subject	Chemistry
Exam Board	CIE
Topic	Metals
Sub-Topic	
Paper Type	Alternative to Practical
Booklet	Mark Scheme 4

Time Allowed: 53 minutes

Score: /44

Percentage: /100

1 Experiment 1 Temperatures correct 2 [2]
 (-1 any incorrect)

Time/Min	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
Temp/'C	22	24	26	28	29	30	30	29	28	27	26

Experiment 2 Temperatures correct 2 [2]
 (-1 any incorrect)

Time/Min	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
Temp/'C	21	19	17	15	14	13	13	14	15	16	17

(a) Graph. Points plotted correctly 3
 (-1 each incorrect)
 Smooth lines/curves 2
 Labelled 1 [6]

(b) (i) Temperature from graph 29.S-C 1
 ± 0.25°C
 Temperature from graph 13.S-C 1 [2]

(ii) 1. Exothermic 1
 2. Endothermic 1 [2]

(c) Carbonate 1
 Fizz/gas with acid 1 [2]

(d) (i) 22 °C 1
 21 °C } No units only (1) 1
 (ii) Reference to room temperature/reaction finished 1 (3)

- 2 a) Points correctly plotted (2), -1 for each incorrect. ✓
Smooth line graph, ignoring 3 minutes point (1) 3
- (b) Point at 3 minutes, 256.6g (1)
not on curve (1) 2
- (c) gas given off (1) 1
- (d) to prevent loss of acid (spray) (1)
/ only gas out 1
- (e) 5 minutes (1) 1
- (f) Sketch graph below original graph (1)
levelling off at same mass (1) 2

3. (c)

Table of results.

Initial	temperatures correct (2)	-1 for any incorrect
	18	
	21	
	19	
	22	
Maximum	temperatures correct (2)	
	23	
	24	
	79	
	22	
Differences	correctly calculated (2)	5 3 60 0

6