



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CHEMISTRY

0620/63

Paper 6 Alternative to Practical

May/June 2017

MARK SCHEME

Maximum Mark: 40

Published

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This document consists of **4** printed pages.

| Question | Answer | Marks |
|-----------|---|-------|
| 1(a)(i) | (delivery) tube | 1 |
| 1(a)(iii) | arrow beneath the tube containing the mixture of alcohols | 1 |
| 1(b) | to cool | 1 |
| | the gas into a liquid | 1 |
| 1(c) | to measure the temperature of the vapour / temperature of liquid would not be constant | 1 |
| 1(d) | E shown on the test-tube in water bath | 1 |
| 1(e)(i) | lighted splint ignites the liquid / test for water, e.g. add anhydrous copper(II) sulfate gives a negative result | 1 |
| 1(e)(ii) | melting / boiling point determination | 1 |

| Question | Answer | Marks |
|----------|---|-------|
| 2(a) | all volume boxes completed correctly: 0, 13, 25, 38, 48, 59, 70, 79, 88, 96 | 3 |
| 2(b) | origin plotted | 1 |
| | other points correctly plotted | 1 |
| | two smooth lines | 1 |
| | labelled | 1 |
| 2(c) | Experiment 1 | 1 |
| | more concentrated / stronger acid / the acid has a lower pH | 1 |

| Question | Answer | Marks |
|----------|---|-------|
| 2(d) | volume of gas at 30 s | 1 |
| | correct calculation of rate | 1 |
| | unit: cm^3/s OR cm^3s^{-1} | 1 |
| 2(e) | all the magnesium will have reacted | 1 |
| 2(f) | faster reaction / increased rate | 1 |
| | magnesium powder has a higher surface area | 1 |
| 2(g) | advantage: easy to use / quick | 1 |
| | disadvantage: not accurate | 1 |
| 2(h) | use of burette / pipette / gas syringe / weighed amount of magnesium / repeat experiment (and average) / clean the magnesium / remove oxide layer | 1 |

| Question | Answer | Marks |
|----------|---|-------|
| 3(a) | chlorine | 1 |
| 3(b)(i) | iron(III) | 1 |
| | hydroxide | 1 |
| 3(b)(ii) | green | 1 |
| | precipitate | 1 |
| 3(c) | oxygen | 1 |
| 3(d) | catalyst | 1 |
| | transition element compound / manganese oxide | 1 |

| Question | Answer | Marks |
|----------|---|-------|
| 4 | any 6 from: <ul style="list-style-type: none">• crush lumps• pestle and mortar• weigh cassiterite• heat/reduce• with carbon/CO/more reactive metal, e.g. Zn• weigh tin• $(\text{mass of tin} / \text{initial mass}) \times 100 (\%)$ | 6 |