**Cambridge International Examinations**
Cambridge International General Certificate of Secondary Education

**CHEMISTRY** **0620/61**

Paper 6 Alternative to Practical **May/June 2017**

MARK SCHEME

Maximum Mark: 40

**Published**

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| Question | Answer | Marks |
|---|---|---|
| 1(a)(i) | stirrer / glass rod | **1** |
| 1(a)(ii) | Spatula | **1** |
| 1(a)(iii) | nitric (acid) | **1** |
| 1(a)(iv) | bubbles / fizz / effervescence | **1** |
| 1(b) | the reaction is (fast) at room temperature | **1** |
| 1(c) | strontium carbonate | **1** |
| | solid is left behind | **1** |
| 1(d) | filter | **1** |
| | heat / evaporate | **1** |
| | to crystallising point / glass rod test / until saturation point | **1** |

| Question | Answer | Marks |
|---|---|---|
| 2(a) | initial and final readings completed correctly: 4.1, 38.3 | **1** |
| | difference completed correctly: 34.2 | **1** |
| 2(b) | initial and final readings completed correctly: 3.7, 20.8 | **1** |
| | difference completed correctly: 17.1 | **1** |
| 2(c)(i) | solution **C** is more concentrated | **1** |
| | a greater volume of thiosulfate was needed | **1** |
| 2(c)(ii) | 2 × as concentrated | **1** |

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| Question | Answer | Marks |
|---|---|---|
| 2(d) | 1.5 × value from table in **(b)** for Experiment 2 | **1** |
| | unit: $cm^3$ | **1** |
| 2(e)(i) | 2 sources of error, e.g.:<br>• using a measuring cylinder to measure solution **C** / solution **D**<br>• only carrying out the experiments once<br>• going past the end-point | **2** |
| 2(e)(ii) | 2 meaningful improvements **related to (e)(i)**:<br>• use a pipette / burette<br>• repeat the experiment<br>• improvement linked to going past the end-point | **2** |

| Question | Answer | Marks |
|---|---|---|
| 3(a) | solid spits out of the tube / the tube might crack | **1** |
| 3(b) | carbon dioxide | **1** |
| 3(c) | copper / $Cu^{2+}$ | **1** |
| | carbonate / $CO_3^{2-}$ | **1** |
| 3(d) | white | **1** |
| 3(e)(i) | no reaction / change | **1** |
| 3(e)(ii) | yellow | **1** |
| | precipitate | **1** |
| 3(f) | lilac | **1** |

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| Question | Answer | Marks |
|---|---|---|
| 3(g) | any 2 from:<br>• blue / roaring / hot flame<br>• use of a splint / wire to introduce the solid into the flame<br>• use of (concentrated) hydrochloric acid | **2** |

| Question | Answer | Marks |
|---|---|---|
| 4(a) | (red) litmus turns blue | **1** |
| 4(b) | heat / boil the mixture | **1** |
| | condense the vapour | **1** |
| 4(c) | filter / decant | **1** |
| | wash residue (with water) | **1** |
| | dry | **1** |

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