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

**CHEMISTRY** **0620/52**

Paper 5 Practical Test **March 2018**

MARK SCHEME

Maximum Mark: 40

**Published**

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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## Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

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|---|
| GENERIC MARKING PRINCIPLE 5:<br><br>Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen). |
| GENERIC MARKING PRINCIPLE 6:<br><br>Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind. |

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| Question | Answer | Marks |
|---|---|---|
| 1(a) | *table of results*<br>initial, final readings and differences completed correctly | **1** |
| | all readings to 1 decimal places | **1** |
| 1(b) | *table of results*<br>initial, final readings and differences completed correctly | **1** |
| | comparable to supervisor's | **1** |
| 1(c) | initial, final readings and differences completed correctly | **1** |
| 1(d)(i) | yellow **and** to orange | **1** |
| 1(d)(ii) | effervescence | **1** |
| 1(e) | Experiment 3 | **1** |
| 1(f) | pipette / burette | **1** |
| 1(g) | *effect* no effect | **1** |
| | *reason* no change in reactant concentrations/owtte | **1** |
| 1(h)(i) | 1:2 | **1** |
| 1(h)(ii) | different indicators used / owtte | **1** |
| 1(i) | more than one colour change / cannot find end point | **1** |
| 1(j) | repeat (experiments) | **1** |
| | compare / average / check spread of results | **1** |

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| Question | Answer | Marks |
|---|---|---|
| 2 | tests on solution **M** | |
| 2(a)(i) | yellow / brown | **1** |
| 2(a)(ii) | <7 | **1** |
| 2(b) | white precipitate | **1** |
| 2(c) | no reaction / change / precipitate | **1** |
| 2(d) | brown | **1** |
| | precipitate | **1** |
| 2(e) | iron | **1** |
| | III / 3 / three | **1** |
| | chloride | **1** |
| 2 | tests on solid **N** | |
| 2(f) | green | **1** |
| 2(g) | turns black | **1** |
| | condensation | **1** |
| | limewater | **1** |
| | white precipitate / milky | **1** |
| 2(h) | blue-green | **1** |
| 2(i) | turns darker / turns brown / effervescence | **1** |

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| Question | Answer | Marks |
|---|---|---|
| 2(j) | *any two from:*<br><br>copper / transition element | **1** |
| | carbonate<br><br>hydrated / water | **1** |

| Question | Answer | | | Marks |
|---|---|---|---|---|
| 3 | | *gas volume* | *mass loss* | **max 6** |
| | **M1** | Mg added to sulfuric acid | Mg added to sulfuric acid | |
| | **M2** | in a suitable container with ability to have a bung | in a suitable container | |
| | **M3** | methods of measuring gas volume (gas syringe, downward displacement of water using a measuring cylinder) | on a balance | |
| | **M4** | start timer / timing (when added together) | start timer / timing (when added together) | |
| | **M5** | measure volume of gas | measure mass loss | |
| | **M6** | at set time / at end of experiment / at (regular) known intervals | at set time / time to end of experiment / at (regular) known intervals | |
| | **M7** | rate = volume ÷ time | rate = mass loss ÷ time | |

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