| COMBINED SCIENCE | **0653/53** |
|---|---|
| Paper 5  Practical Test | **May/June 2018** |
| MARK SCHEME | |
| Maximum Mark: 30 | |

**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.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the May/June 2018 series for most Cambridge IGCSE™, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

This document consists of **6** printed pages.

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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.

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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.

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GENERIC MARKING PRINCIPLE 2:

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

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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.

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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:

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:

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.

| Question | Answer | Marks |
|---|---|---|
| 1(a)(i) | quality drawing occupying at least half the box ;<br>detail in the centre ; | **2** |
| 1(a)(ii) | both measurements recorded to nearest mm ;<br>drawing larger than original ;<br>measurement of drawing correct ; | **3** |
| 1(a)(iii) | correct calculation of magnification ; | **1** |
| 1(b) | yellow / green / orange / red ;<br>reducing sugar present ; | **2** |
| 1(c)(i) | ethanol should be added before water AW ; | **1** |
| 1(c)(ii) | cloudy / emulsion ; | **1** |

| Question | Answer | Marks |
|---|---|---|
| 2(a) | black ; | 1 |
| 2(b)(i) | (filtrate)…blue ;<br>(residue)… red / brown / pink ; | 2 |
| 2(b)(ii) | blue ppt. ; | 1 |
| 2(b)(iii) | solution loses colour ;<br>red / brown / pink solid ; | 2 |
| 2(c)(i) | copper ;<br>blue ppt. (with sodium hydroxide solution) / red or brown or pink solid with magnesium / blue filtrate ; | 2 |
| 2(c)(ii) | silver nitrate solution ;<br>white ppt. for hydrochloric **AND** slight or no ppt. for sulfuric ;<br><br>**OR**<br><br>barium nitrate solution ;<br>no ppt. for hydrochloric **AND** white ppt. for sulfuric ; | 2 |

| Question | Answer | Marks |
|---|---|---|
| 3(a)(i) | $d_2$ recorded to the nearest millimetre for $d_1$ = 10 cm ; | 1 |
| 3(a)(ii) | all values of $d_2$ recorded ;<br>values of $d_2$ decreasing down the table ; | 2 |
| 3(b) | all *a* and *b* values correct ; | 1 |
| 3(c)(i) | suitable choice of scales ($\geqslant$ half the grid used) including the origin ;<br>at least three points plotted correctly to half a small square ;<br>good best-fit straight line judgement ; | 3 |
| 3(c)(ii) | correct intercept read from *a* axis to within half a small square; | 1 |
| 3(d) | correct calculation **and** 2 / 3 sf ; | 1 |
| 3(e) | any one from:<br>difficulty in obtaining balance<br>load **P** (or **Q**) not uniform<br>difficulty in placing the centre of **P** (or **Q**) over the mark on the rule<br>difficulty in keeping pivot at 40 cm ; | 1 |