Cambridge IGCSE

Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

CO-ORDINATED SCIENCES **0654/53**

Paper 5 Practical Test **October/November 2018**

MARK SCHEME

Maximum Mark: 45

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 October/November 2018 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

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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.

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)	yellow / green / orange / red; contains reducing sugar;	**2**
1(a)(ii)	wore goggles because of hot water / chemicals use **OR** use test-tube holders because of hot water;	**1**
1(a)(iii)	any **one** from: volume of Benedict's solution; mass / volume of nectar; concentration of nectar; time in water bath / left for same time; temperature of water bath;	**max 1**
1(a)(iv)	yellow or green indicates less nutrient / orange or red indicates more nutrient;	**1**
1(b)(i)	continuous outline; large drawing using at least half of height of box; anther and filament clearly visible; stigma and style visible;	**4**
1(b)(ii)	petal correctly labelled; stigma correctly labelled; anther correctly labelled;	**3**
1(c)(i)	ethanol / alcohol; water **and** cloudy;	**2**
1(c)(ii)	opaque liquid would mask observation;	**1**

Question	Answer	Marks
2(a)(i)	funnel, filter paper and test-tube drawn; at least two of funnel, filter paper and test-tube labelled; positions of residue and filtrate correctly labelled;	**3**
2(a)(ii)	(filtrate) colourless; **AND** (residue) black;	**1**
2(b)(i)	no ppt. / no reaction / remains colourless; blue stays blue **AND** red goes blue;	**2**
2(b)(ii)	(nitric) no reaction / no bubbles; **AND** white ppt.;	**1**
2(b)(iii)	(sodium hydroxide) not Cu^{2+} / not Fe^{2+} / not Fe^{3+} / not Zn^{2+} / NH_4^+; (litmus papers) ammonium / NH_4^+; (nitric) not CO_3^{2-} / not carbonate; (barium nitrate) SO_4^{2-} / sulfate;	**4**
2(c)(i)	(sulfuric) no bubbles / forms blue solution;	**1**
2(c)(ii)	blue ppt.; Cu^{2+} / copper(II) / copper;	**2**
2(c)(iii)	copper oxide / CuO;	**1**

Question	Answer	Marks
3(a)(i)	any sensible value for temperature in column 2 for t = 0;	**1**
3(a)(ii)	all readings present in column 2; t values correct;	**2**
3(b)(i)	to give the thermometer time to react / to record the highest temperature reached;	**1**
3(b)(ii)	any **two** from; read perpendicular to scale / stir before reading / place clock close to test tube / keep thermometer at same level / leave thermometer in the test tube;	**2**
3(c)	all readings present in column 3*;* θ decreasing; temperatures decreasing more slowly than in column 2;	**3**
3(d)(i)	all units correct;	**1**
3(d)(ii)	both temperature falls calculated correctly;	**1**
3(e)	conclusion matches results; because bigger temperature drop in the same time / rate of cooling greater;	**2**
3(f)	(improvement:) use measuring cylinder to measure water poured into **test-tube**; (reason:) to compare equal volumes / amounts of water each time;	**2**