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**CO-ORDINATED SCIENCES****0654/52**

Paper 5 Practical Test

**October/November 2018**

MARK SCHEME

Maximum Mark: 45

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

**PUBLISHED****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)	<b>A</b> is blue (with Benedict's solution) ; purple / lilac (with biuret solution) ; blue-black (with iodine solution) ;	<b>3</b>
1(a)(ii)	<b>B</b> is orange / red (with Benedict's solution) ; blue (with biuret solution) <b>AND</b> brown / orange / yellow (with iodine solution) ;	<b>2</b>
1(a)(iii)	<b>C</b> is blue (with Benedict's solution) <b>AND</b> blue (with biuret solution) ; blue-black (with iodine solution) ;	<b>2</b>
1(b)	<b>A</b> contains protein <b>and</b> starch ; <b>B</b> contains <u>reducing sugar</u> ; <b>C</b> contains starch ;	<b>3</b>
1(c)	wear goggles because of hot water / handling chemicals <b>OR</b> use test-tube holders / gloves because of hot water ;	<b>1</b>
1(d)	alcohol ; water <b>AND</b> cloudy / emulsion ;	<b>2</b>
1(e)	any <b>two</b> from: volume of Benedict's solution ; mass / volume of food ; concentration of food ; time in water bath / left for same time ; temperature of <b>water bath</b> ;	<b>max 2</b>

Question	Answer	Marks
2(a)(i)	time for copper carbonate to the nearest second <b>AND</b> black ;	<b>1</b>
2(a)(ii)	time for magnesium carbonate less than 60 s <b>AND</b> white ;	<b>1</b>
2(a)(iii)	time for <b>L</b> less than 60 s <b>AND</b> yellow (when hot) ;	<b>1</b>
2(a)(iv)	correct order of speed ;	<b>1</b>
2(a)(v)	carbon dioxide / CO <sub>2</sub> ;	<b>1</b>
2(b)(i)	any <b>two</b> from difficult to consistently determine 'milky' point of limewater ; error reading / stopping the stopclock ; too much variation in amounts of carbonates ; variation in volume of limewater ; variation in heat ; escape of gas from bung ;	<b>max 2</b>
2(b)(ii)	identify anomalous results / average more accurate / checks reliability ;	<b>1</b>
2(b)(iii)	measure the volume of gas ; in a certain time ;  suitable diagram ;	<b>3</b>
2(c)(i)	white ppt. ; white ppt. disappears (in excess reagent) ;	<b>2</b>
2(c)(ii)	zinc / Zn <sup>2+</sup> ;	<b>1</b>

Question	Answer	Marks
2(d)	(order of reactivity of metals is $Mg > Zn (L) > Cu$ )  fully agree <b>IF</b> decomposition rates <b>Mg&gt;L&gt;Cu</b> <b>OR</b> completely wrong <b>IF Cu&gt;L&gt;Mg</b> <b>OR</b> partly agree <b>IF</b> one pair in correct order ;	1

Question	Answer	Marks
3(a)(i)	for length = 10 cm current value recorded, < 1 A and consistently to 1 / 2 / 3 d.p. ; voltage value recorded and < 2 V ;	2
3(a)(ii)	calculation of power correct ;	1
3(a)(iii)	W / watts (in Table 3.1) ;	1
3(a)(iv)	all current values approximately the same ; V values increasing ; all P values correct ; consistent 2 / 3 d.p. for P ;	4
3(a)(v)	so that wire does not become hot / resistance of wire might change / cell or battery may run down ;	1
3(b)(i)	axes labelled with units ; suitable scales and $\geq$ half the grid used <b>AND</b> starting at (0,0) ; at least 4 plots correct to half a small square ;	3
3(b)(ii)	good best-fit line judgement ;	1
3(c)	(directly) proportional (for straight line) / 1 ; (straight) line through the origin ;	2