

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0654 CO-ORDINATED SCIENCES

0654/52

Paper 5 (Practical), maximum raw mark 45

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 will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2015 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.

® IGCSE is the registered trademark of Cambridge International Examinations.

Page 2	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0654	52

1 (a)

<i>test</i>	<i>food group identified</i>
<i>Benedict's</i>	reducing sugar ;
<i>biuret</i>	protein ;
<i>iodine</i>	starch ;

[3]

(b) tests on *milk*:

<i>test</i>	<i>observations</i>
<i>Benedict's</i>	yellow / red / orange
<i>biuret</i>	purple
<i>iodine</i>	orange / no change

all three correct = 2, two correct = 1, one correct = 0 ;;

[2]

(c) tests on *rice*:

<i>test</i>	<i>observations</i>
<i>Benedict's</i>	blue / no change
<i>biuret</i>	purple
<i>iodine</i>	blue-black / black

all three correct = 2, two correct = 1, one correct = 0 ;;

[2]

(d) (mark independently to observations)

milk contains:

reducing sugar ;

protein ;

rice contains:

protein ;

starch ;

(allow: ecf from (a) if groups muddled)

(allow: ecf 'sugar' from (a))

[max 4]

Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0654	52

- (e) (i) dissolve in/mix with ethanol ;
add water ; [2]
- (ii) cloudy/milky/emulsion (*this mark linked to (e)(i) being at least partly correct*) ; [1]
- (iii) milk is cloudy/milky/cannot see the result/AW (*independent mark*) ; [1]

[Total: 15]

- 2 (a) vapour burns/blue flame/flammable gas/splint remained lit ;
solid goes grey/black/darkens/condensation ; [2]
- (b) no effervescence/no fizzing/no bubbles ;
pungent smell/blue litmus turns red ;
(do **NOT** allow this mark if has **red litmus to blue**)
not a carbonate / not CO_3^{2-} ;
acidic gas ; [4]
- (c) no visible reaction/no ppt. ;
not a sulfate / not SO_4^{2-} ; [2]
- (d) (i) blue litmus turns red ; [1]
- (ii) effervescence/fizzing/bubbles ; [1]
- (iii) (HCl) faster effervescence/more fizzing/more bubbles (than Q) ; [1]
- (iv) (weakly) acidic ; [1]
- (e) (i) effervescence/fizzing/bubbles ;
(limewater becomes) milky/white ppt. ; [2]
- (ii) calcium carbonate/ CaCO_3 /calcium hydrogen carbonate/ $\text{Ca}(\text{HCO}_3)_2$; [1]

[Total: 15]

- 3 (a) (i) realistic I value recorded for 15.0 cm ;
realistic V value recorded for 15.0 cm ; [2]
- (ii) units both correct (symbols **or** names) ; [1]
- (iii) all I values $< 1.5\text{ A}$ **and** to at least 2 d.p. ;
all V values $< 2.5\text{ V}$ **and** to at least 1 d.p. ;
 I values decreasing and V values increasing ; [3]
(allow: one pair of identical values)

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0654	52

- (b) axes labelled with units ;
suitable choice of scales (\geq half the grid used) ;
at least 5 plots correct to half a small square ;
good best-fit line judgement ; [4]
- (c) indication **on graph** of how data obtained **and** at least half of line used ;
correct calculation for triangle method using data from graph ; [2]
- (d) answer equals (c) recorded to 2 or 3 significant figures ; [1]
(ecf from (c))
- (e) reading meter scales ;
observe perpendicularly (owtte) ;
OR
measuring the length of wire ;
observe perpendicularly / repeat for increasing lengths of wire / pull wire straight ; [max 2]
(allow: 1 mark for not switching off between readings / battery might run down)
(ignore: crocodile clips)

[Total: 15]