## **CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**Cambridge International General Certificate of Secondary Education** 

## MARK SCHEME for the October/November 2014 series

## 0654 CO-ORDINATED SCIENCES

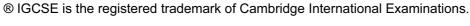
**0654/53** Paper 5 (Practical), maximum raw mark 53

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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## 1 (a)

2

(ii) white ppt.;

(iii) magnesium carbonate/MgCO<sub>3</sub>;

liquid	Test 1 (Benedict's)	Test 2 (biuret)	Test 3 (iodine solution)	
A	blue	purple	brown	
В	blue	blue	blue-black	
С	yellow/green/orange/red	blue	brown	

	С		yellow	//green/orange/red	blue	brown	
	Test 1	C A and E		yellow/green/orange blue ;	e/red;		[2]
	Test 2	A B and 0		purple ; blue ;			[2]
	Test 3	B A and 0	C	blue-black ; brown <i>(or orange or y</i> observations) ;	vellow if reported in Sup		[2]
(b)	liquid <b>B</b> liquid <b>C</b>		; ng) sug	ar/glucose/maltose/ st results have clearly	lactose ; been placed in wrong c	olumns)	[3]
(c)	(c) same volume of solution; add same amount of Benedict's solution/keep other factors constant; warm until no further change/excess Benedict's; yellow or green = less concentrated/orange or red = more concentrated; [4]					[4]	
(d)	(d) liquid A/protein and liquid B/starch; they cannot pass through cell membranes/molecules are large/insoluble in water; [2]					[2]	
						[Total: 1	15]
(a)	test: observa	ation (sol ation (gas f gas giv	s test):				[4]
(b)	` '			ence/fizzing; /becomes hotter;			[2]

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[1]

[1]

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(c)	(i)	blue ppt.;		[1]
	(ii)	red litmus become blue ; (DO NOT ALLOW if also has blue litmus becomes red)		[1]
	(iii)	colour: blue/purple; pH: 8–11;		[2]
	(iv)	alkali ;		[1]
	(v)	magnesium hydroxide ;		[1]
( <b>d)</b> ma		gnesium oxide ;		[1]
				[Total: 15]
(a)	(i)	mass recorded to nearest g;		[1]
	(ii)	T <sub>1</sub> present ;		[1]
	(iii)	$T_2$ present <b>AND</b> greater than $T_1$ ;		[1]
	(iv)	$T_3$ present; $T_3$ between $T_1$ and $T_2$ ; temperatures to nearest 0.5 °C <b>AND</b> in °C at least once in (ii) – (iv)	;	[3]
(b)	(i)	calculation of temperature rise correct;		[1]
	(ii)	calculation of temperature fall <b>AND</b> greater than temperature rise ;		[1]
(c)	(i)	gain in thermal energy correct;		[1]
	(ii)	loss in thermal energy correct;		[1]
(d)	(i)	energy gained by the glass correct;		[1]
	(ii)	correct answer ; accuracy mark: answer between 0.4J/g°C and 1.8J/g°C ;		[2]
(e)	ene not wate volu	rgy loss on transfer or heat lost to air; all glass at same temperature; er left in beaker after pouring; ume of hot water approximate;		
		ufficient stirring; other sensible suggestion;		[max 2]
				[Total: 15]