CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0653 COMBINED SCIENCE

0653/62

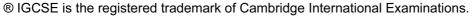
Paper 6 (Alternative to Practical), maximum raw mark 60

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) Benedict's: (reducing) sugar;

biuret: protein;

iodine: starch; [3]

(b)

Benedict's	biuret	iodine		
green/yellow/orange/red;	purple/lilac	(orange)		
(blue)	purple/lilac (both);	blue-black/black;		

[3]

[2]

(c) (i) dissolve in/mix with ethanol; add water;

[1]

(ii) cloudy/milky/white emulsion;

[1]

(iii) milk is white/milky/cannot see the result/AW;

[Total: 10]

2 (a) apply a lighted splint/flame AND gas ignites/a flame is seen;

[1]

(b) (i) suitable diagram of CO₂ passing into limewater; white ppt. / white/milky;

[2]

(ii) carbon dioxide;

[1]

(c) calcium carbonate/calcium hydrogencarbonate;

[1]

(d) (i) litmus paper/pH paper/universal indicator (in the vapour);

blue to red (blue can be line above);

OR

full range indicator/universal indicator/pH indicator; red/orange/yellow;

[max 2]

(ii) to avoid ejection of hot acid/to avoid vapour of nitric acid/to avoid acid touching the paper;

[1]

(e) connect a gas syringe to the tube/collect in measuring cylinder over water/counting bubbles (in water);

find the volume of gas evolved in a fixed time/time taken to give out a certain volume of gas/number of bubbles in a fixed time/time taken for a certain number of bubbles;

[2]

[Total: 10]

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Syllabus

[1]

<u> </u>	age	ა	Cambridge IGCSE – October/November 2015	0653	62
			Cambridge 1000L - October/November 2013	0033	UZ
3	(a)		: 25 cm: 0.69 (amps) ; : 40 cm: 0.48 (amps) ;		
			and 1.2 both required (volts, for d = 25 and 40 cm respectively);		[3]
	(b)	(i)	points correctly plotted $\pm \frac{1}{2}$ small square (allow one error);		
			straight line drawn ;		[2]
		(ii)	indication on graph of how data obtained AND at least half of line us	sed;	
			correct calculation for triangle method using data from graph;		[2]
		(iii)	0.67 or 0.7 ;		[1]
	(c)	(i)	the ammeter reading will be off the scale/current greater than 1A/the ammeter may be damaged;		
					[max 1]
		(ii)	the wire will heat up/(so that) the resistance (of the wire) will be cha	anged ;	[1]
					[Total: 10]
4	(a)	(i)	• •		[2]
			(OR (for max 1): 39 ± 4 (mm) or 3.9 ± 0.2 / (cm))		
		(ii)	shows measurement of the scale bar in working $20 \text{ mm} \pm 1 \text{ mm}$;		[0]
			answer = 0.4 (mm);		[2]
	(b)	32			
	(5)	72			
		45 10	(all four numbers to be correct);		[1]
	(c)	(i)	axes labelled with units;		
			suitable linear scale; at least 4 plots correct ± half small square;		
			best-fit line peaking at or above 0.5 mol/dm ³ ;		[4]
		(ii)	read from peak of graph \pm half small square ;		[1]
		(,	read from pour or graph - han email equale,		
					[Total: 10]
5	(2)	(i)	ruetv ·		[1]
J	(a)	(i)	rusty;		[1]
		(ii)	the nail has not rusted/no change;		[1]

Mark Scheme

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(iii) the paint excludes air/oxygen/water/cannot react with air/oxygen/water

/prevents oxidation;

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Page 4	4	Mark Scheme	Syllabus	Paper
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(b)	(i)	lighted splint AND pops ;		[1]
	(ii)	(add aqueous) ammonia/sodium hydroxide AND green precipitate	;	[1]
	(iii)	yellow/orange/brown/red-brown;		[1]
	(iv)	(add aqueous ammonia/sodium hydroxide and) orange/red-brown precipitate;	n/brown	[1]
(c)	mea	g mass from iron wire AND steel wire; asure deflection/bend/distance with the ruler; wires of same thickness/same length;		[3]
		g,		[Total: 10]
6 (a)	(tea	t) pipette/dropper ;		[1]
(b)	(i)	A : 16.5 ; B : 8. <u>0</u> ; C : 11.5 ;		[3]
	(ii)	A C B;		[1]
(c)		nydrous) copper sulfate/cobalt chloride; ing/freezing point/melting point;		[2]
(d)	(i)	measuring cylinder (to measure) volume; balance/scale(s) (to measure) mass;		[2]
	(ii)	the mass is divided by the volume $\frac{\text{mass}}{\text{volume}}$;		[1]