## **CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**Cambridge International General Certificate of Secondary Education** 

## MARK SCHEME for the October/November 2014 series

## 0610 BIOLOGY

0610/52

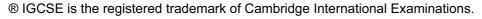
Paper 5 (Practical Test), maximum raw mark 40

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 2014 series for most Cambridge IGCSE<sup>®</sup>, Cambridge International A and AS Level components and some Cambridge O Level components.





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## Abbreviations used in the Mark Scheme

• ; separates marking points

/ separates alternatives within a marking point

• R reject

• I ignore (mark as if this material was not present)

A accept (a less than ideal answer which should be marked correct)

AW alternative wording

<u>underline</u> words underlined must be present

max indicates the maximum number of marks that can be awarded
 mark independently the second mark may be given even if the first mark is wrong

• A, S, P, L Axes, Size, Plots and Line for graphs

• O, S, D, L Outline, Size, Detail and Label for drawings

(n)ecf (no) error carried forward

• () the word / phrase in brackets is not required, but sets the context

ora or reverse argument.AVP any valid point

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Question	Answer	Mark	Additional Guidance
1 (a) (i)	4 results recorded;		two cells complete = 1 mark
	results recorded in seconds;		times recorded in minutes and seconds = max 3
	consistent results for each pair of results;		
	one faster than the other;	4	
(ii)	bubbles (collect on filter paper) / effervescence / fizzing;	1	
(iii)	(paper from) faster to rise / takes less time; ora faster speed / less time linked to more catalase (in fruit); ora		description taken from results in (a)(i) red / ripe or green / unripe
	more catalase causes more, oxygen / gas / bubbles, to be released; ora		A enzyme
	correct use of manipulated figures;	max 3	
(b)	method to prepare extracts of pepper;  Benedict's (reagent / solution);  heat / boil;  colour change from <u>blue</u> or turquoise to green / yellow / orange / red;		A cut / chop / crush / grind / AW A add to water / form a solution A Fehling's / copper sulfate and sodium hydroxide A Clinistix A 70 °C or more
	safety factor – water-bath / AW;	5	A goggles / tongs / lab coat / tie hair back / tuck tie in

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(c) (i)	A – axes labelled <b>and</b> scaled evenly;		x-axis: name of fruit y-axis: sugar content /g per 100 g I orientation
	S – size;		plots to fill half, or more than half, of grid along both axes
	P – all bars plotted accurately ±½ small square;		
	B – bars not touching, of equal width and equally spaced;		A points for line graphs I distance between origin and first bar
		4	other graphs (e.g. histogram / line graph) = max 3 ( <b>A</b> , <b>S</b> and <b>P</b> only)
(ii)	6 (times);		answer must be whole number
	15 ÷ 2.7;	2	
		[Total: 19]	

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2	(a)	O – outline is single clear line (and no shading anywhere);		I minor overlaps or breaks
		S – size;		drawing larger than 90 mm (length from top of shoot to tip)  R If drawing touches / extends into printed words
		<b>D</b> – detail of layers and proportion;		minimum detail is two layers, central core and outer layer
			4	label line must make contact with structure
		L – label the site of attachment for leaves;	•	
	(b) (i)	(turns) blue-black;	1	A darker
	(ii)	blue-black means starch present / AW;		
		description of distribution of starch shown;	2	
	(c)	measurement of <b>ST</b> : 13 ±1 (mm);		A if answer is recorded in cm with matching unit
		actual width: 1.3 ±0.1 (mm);		
		formula: magnification = <b>ST</b> ÷ width / 13 ÷ 1.3;		
		magnification calculation: ×10;	4	whole number answer required
			[Total: 11]	

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3 (a)	feature  (end of) abdomen / body /AW  bands / stripes (on abdomen / body)	male rounded / blunt / AW black / dark / AW short / AW wide / AW three or four /	female pointed / AW; white / light / AW; long / AW; thin / AW; six or five /		A comparative answers / presence or absonce of
	two correct features correct descriptions i descriptions;;	less dark / black / AW in first column;	more; white / light /grey / AW;  mark each for any two	max 3	<ul><li>A. comparative answers / presence or absence of features</li><li>A. round vs oval</li></ul>
(b)	one pair of antennae wings;	,		2	A compound eyes

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(c)	independent variable:		
	different colours (of flowers / paper / AW);		A only two different colours / named colours
	controlled variables: (max 2)		A same paper flowers /shapes
	similar flowers for shape / size / AW;		A same paper nowers /shapes
	same type of attraction mechanism / scent / honey guides / nectar / same plant species;		
	same area (in open) / same number of bees and flies (if in enclosed chamber) / AW;		
	same time / period;		
	method:		
	count / observe / video / film / record the number of visits /		
	AW;		
	repeats / AW;		
	handling of data:		
	calculate average / tally chart / graph / table / AW;		
	AVP; e.g. a safety point with reference to bees	max 5	
		[Total: 10]	