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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

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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; results recorded in seconds; consistent results for each pair of results; one faster than the other;	4	two cells complete = 1 mark times recorded in minutes and seconds = max 3
(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 more catalase causes more, oxygen / gas / bubbles, to be released; ora correct use of manipulated figures;	max 3	description taken from results in **(a)(i)** red / ripe **or** green / unripe **A** enzyme
(b)	method to prepare extracts of pepper; Benedict's (reagent / solution); heat / boil; colour change from blue or turquoise to green / yellow / orange / red; safety factor – water-bath / AW;	5	**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 **A** goggles / tongs / lab coat / tie hair back / tuck tie in

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

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

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3 (a)

feature	male	female
(end of) abdomen / body /AW	rounded / blunt / AW	pointed / AW;
	black / dark / AW	white / light / AW;
	short / AW	long / AW;
bands / stripes (on abdomen / body) /AW	wide / AW	thin / AW;
	three or four / less	six or five / more;
	dark / black / AW	white / light /grey / AW;

two correct features in first column;

correct descriptions in each row, one mark each for any two descriptions;;

max 3

A. comparative answers / presence or absence of features

A. round vs oval

(b)

one pair of antennae;

wings;

2

A compound eyes

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(c)	independent variable: different colours (of flowers / paper / AW); controlled variables: (max 2) similar flowers for shape / size / AW; 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**	**A** only two different colours / named colours **A** same paper flowers /shapes
		[Total: 10]	

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