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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2010 question paper for the guidance of teachers

0610 BIOLOGY

0610/52

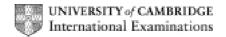
Paper 52 (Practical Test), maximum raw mark 40

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 must be read in conjunction with the question papers and the report on the examination.

• CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the May/June 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



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General notes

Symbols used in mark scheme and guidance notes.

/ separates alternatives for a marking point

; separates points for the award of a mark

A accept – as a correct response

R reject – this is marked with a cross and any following correct statements do not gain any

marks

I ignore/irrelevant/inadequate - this response gains no mark, but any following correct

answers can gain marks.

() the word/phrase in brackets is not required to gain marks but sets context of response

for credit. e.g. (waxy) cuticle. Waxy not needed but if it was described as a cellulose

cuticle then no mark.

<u>Small</u> underlined words – this word only/must be spelled correctly

ref./refs. answer makes appropriate reference to

AVP additional valid point (e.g. in additional guidance)

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Question	Mark scheme			Guidance	
1 (a) (i)	(both) have different kinds of teeth AW; (both) have teeth on upper and lower jaws; (both have premolars / molars;		[1]		
(ii)		sheep	dog		1 mark per row
	Tooth surface	ridged / not smooth / interlocking	not ridged / smooth AW not interlocking / overlapping		A equivalent wording
	Upper front teeth	no <u>upper</u> incisors / no teeth / horny pad	upper incisors present / no horny pad		A front teeth in upper jaw R if upper jaw not specified
	Arrangement of front and back teeth	space / gap between front and back teeth	no space between front and back teeth / canines present		A ref. to diastema / little spaces in dog I size / shape / number
	Canines	No canines	canines present	[max 2]	
(b) (i)	upper jaw and lower jaw completed; one canine on each side on each jaw in proper place; PPMMM / PPMMX;			[max 2]	A more Xs

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Question	Mark scheme		Guidance
(ii)	It / they = human (my) teeth / canines / incisors are smaller (in relation to the skull); (my) teeth / canines are less pointed / flatter; (my teeth) are all of similar / same + length; (my teeth) do not have gaps between them;	[max 2]	A converse A fangs / fang like for canines I sharp /blunt A ref. to dog having carnassial teeth I more canines in dog I I have more incisors than dog I size of molars
(c) (i)	 Safety – one from: clothes covered / overall / apron / hair tied back / goggles or glasses worn / water bath for heating test-tubes / use of test tube holders; Procedure S1 and S2 into each of two test- tubes; add water; add Benedict's solution; heat; Expected outcome – colour change from initial to final colour; Equivalents for comparison – one out of: same volume for 2., 3., 4., / heat for the same time / comparison of colour intensity / time taken to change; 	[max 5]	Max 3 for procedure + one mark for safety + one mark for comparison. R ref. to warm water A repeat with S2
(ii)	Procedure 1. leaves on tile; 2. iodine solution added to each; 3. expected colour change from initial to final colour; Equivalents for comparison 4. same volume / mass for 1. 2. / colour intensity;	[max 2]	A 'drops of iodine' for iodine solution R 'amount'

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Question	Mark scheme					Guidance
(iii)		S1	S2			Check supervisor's report first One mark per box
	for reducing sugar	green / yellow;	blue / green;			Observations. No marks for conclusions here
	for starch	blue / black;	blue / black;		[4]	
(iv)	more reducing sugar in S1; starch present in both / may be more in S1; A correct conclusion about how cooking has altered the relative quanities from 'wrong' colours when compared to supervisor's report.		[2]	Conclusions Reducing sugar and starch must be described separately, not together as carbohydrates		
(v)	A plausible explanation for the conclusion in (iv); A less reducing sugar because it dissolves in cooking water AW A ref. to hydrolysis / breakdown of starch / condensation AW A leaves do not store starch (if negative)		[1]			
	Total:		[21]			
2 (a) (i)	in pairs / alternate / o in one plane AW / fla		•	ing AW;	[2]	Check with supervisor's report A AW for all A random if appropriate A making a layer
(ii)	midrib and Labels 2 from leaf blade midrib / vo	uzzy' outline; d side veins shov e / lamina'; eins; stalk / stem;	vn;		[2] [2] [max 4]	R broken, sketchy lines / shading I ref. to phloem / xylem / chlorophyll A hairs / serrated margin where appropriate.

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Question	Mark scheme		Guidance
(iii)	whole squares covered by leaf plus part squares added together / whole squares uncovered by leaf plus part squares uncovered and total taken from 100 in grid;		Credit workable method
	leaf area + units;	[max 2]	R area without units
(b) (i)	Measured length from 2 (a) (iii) is in the table; lengths of 10 leaves entered;		Measure the length of leaf in 2 (a) (iii)
	measurements in mm;	[3]	
(ii)	bar chart; A axes and orientation S scale; if bar chart		Line graph – accept A and S marks only x axis – position of leaf / leaf number from base; y axis – length of leaf blade in mm; credit if more than half the grid used.
	P accurate columns;;	[5]	All correct – 2 marks One incorrect – 1 mark
(iii)	Comment on position of largest / smallest leaf; Trend / pattern / relationship described e.g. leaves near the base are larger / no pattern / irregular; AVP ref. to age / stage of development / shading / for max.	ro1	Look at the graph first as some may be irregular.
	light / photosynthesis ;	[3]	Biological 'reason'