UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS **GCE Ordinary Level**

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for the guidance of teachers

5090 BIOLOGY

5090/03

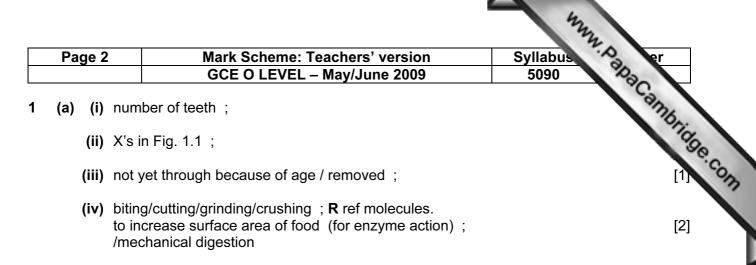
Paper 3 (Practical Test), maximum raw mark 40

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.

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(b) (i)

Immediate observation	Observation after 30 minutes
green/yellow	darker/deeper yellow;
paler green/orange/yellow	orange/red ;
	green/yellow

(1 mark per line)

- (ii) orange/red more acidic ; because sugar converted to acids ; by bacteria ;
- (c) (i) & (ii)

 add iodine (to starch/substrate) ;
 brown (etc)/colour of iodine negative ;
 (blue) <u>black</u> if starch present ;
 add Benedict's, heat ;
 blue to green/orange/red if reducing sugar etc ;

(d) (i) Table 1.3

		test for starch	test for product
first test	amylase	negative	negative (for reducing sugar);
III SI IESI	starch	starch present / +ve	negative (for reducing sugar);
second	with salt added	no starch present ;	yellow/orange ;
test	without salt added	(starch still) present ;	blue/green (less than with salt) ;

[max 5]

[2]

[3]

[max 4]

- (ii) salt speeds activity of amylase ; more breakdown of starch ; more sugars formed ;
 - without salt: breakdown of starch starts ; but some still present ; some sugars formed ;

[max 3]

[Total: 22]

				4342	
	Pa	ge 3	Mark Scheme: Teachers' version	Syllabus 7.0 er	
		<u> </u>	GCE O LEVEL – May/June 2009	5090 202	ļ
2	(a)	Dra Mea	usider as a whole. wing: all 3 attempted ; good quality, double lines, minimal shading etc ; asurements: units (once), cm to 0.1 in all 3 ; realistic accuracy (even if no units) ; els/Description: testa ; no germination/growth ; ref normal S3 ;	Syllabus 5090 Poscannhitige.con	
			green, c.f. white/pale S2 ; <u>etiolation</u> ; tall v short(er) stature ; root hairs drawn & labelled ;	[max 8]	
	(b)	(i)	in S1 enzymes/metabolism slower at low temp ; so less energy/material from store ;	[2]	
		(ii)	in S2 no light so no photosynthesis ; not green/no chlorophyll present ; growth longer & thinner/etiolated ;	[max 2]	
	(c)	(i)	good shape of root tip, with root hairs ; label: root hairs ;	[2]	
		(ii)	increased surface area for absorption AW;	[1]	
	(d)	(i)	<u>mitosis</u> ;	[1]	
		(ii)	unspecialised cells ; dividing repeatedly ; A reproducing ± same shape/size ;	[max 2]	
				[Total: 18]	