UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS GCE Ordinary Level

MARK SCHEME for the May/June 2011 question paper for the guidance of teachers

5090 BIOLOGY

5090/62

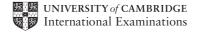
Paper 6 (Alternative to Practical), maximum raw mark 40

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.

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

Cambridge is publishing the mark schemes for the May/June 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



			<u> </u>					
1	(a)	green white A 13 5 B 21 6 Total 34 11						
		6 correct 2 marks 5 correct (with 1 ecf) 1 mark all numbers ×2 and correct 1 mark	[2]					
	(b)	(34:11 = approx) 3:1; result of crossing heterozygous (parents); (inheritance due to) single pair of alleles / two alleles / single gene / monohybrid inheritance; green dominant or recessive white; discontinuous inheritance or variation; [max 4]						
	(c)	grow more seeds / repeat ; even distribution / not random / reduce competition idea ; constant / exactly the same condition(s) (for growth / germination) ;	[max 2]					
	(d)	green or chlorophyll + photosynthesis; carbohydrate (starch, sugar, glucose) production; reference to use of carbohydrate for growth;						
		if only a ref. to seedlings in A because less competition / AW max 1	[3]					
			[Total: 11]					
2	(a)	C capillary / shunt; D sweat gland; R duct E hair follicle / root / papilla / bulb;	[3]					
	(b)	more / less blood near surface or to the skin or through C ; R if movement of vessels heat lost / conserved; R loss / conservation of energy (vaso)dilation / (vaso)constriction; R if of capillaries at least one means of heat loss i.e. conduction, convection, radiation; [max 3]						
		If C has been incorrectly identified in (a) allow max 1 mark for a correct answer in relation to						

Mark Scheme: Teachers' version

GCE O LEVEL - May/June 2011

Syllabus

5090

Paper

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[Total: 6]

Page 2

the part identified as long as it is a skin 'structure' e.g. temperature receptor

Page 3			Mark Scheme: Teachers' version			Syllabus	Paper	
			GCE O LEVEL – Ma	ay/Jun	ie 2011	5090	62	
3	(a)	F carpel / ovary / ovules / style / stigma / pistil / gynaecium present			G any of these absent ;			
		any of	hese absent	+	stamens / anth present ;	stamens / anthers / filaments / androecium present ;		
		swoller	area present	+	swollen area absent ;			
		short(e	r) stalk	+	long(er) stalk ;			
		OVP –	must be comparative ;				[max 2]	
	(b)	(i) magnification stated as ×540 / ×550 / ×560 / ×570 / ×580 with or without working ;;; if × or times absent ;;						
		if this answer not given then look at any working for $27-29$ mm; $\frac{28}{0.05} \text{ or } \frac{56}{0.1} \text{ (adjusted appropriately for } 27-290\text{)};$						
		allow max. 1 for correct result of any calculation with × or time					[3]	
		(ii) cross pollination / male and female flowers / transfer to female flower; by (named) insect / animal; spines / spikes / sticky / rough surface of pollen grain;						
		re	oroductive structures enclosed w	vithin fi	lower / not expose	ed / AVV ;	[max 3]	
	(c)	drawing	complete section drawn at le line indicating outer layer; proportion of seed area to free			n clear, clean lin	es and double	
			at least 5 seeds drawn in co			3		
		labels	seed ; fruit wall / pericarp / epicarp vascular bundle ;	/ meso	ocarp / endocarp	; max 2	[5]	
	(d)	fruits at prepare add Be	nasses / volumes of both fruits ; same stage of ripeness ; ed by crushing / extracting juice / nedicts and heat ;		on vallou oranga	a mod :		
			change described in terms of (bluisson of speed / depth of colour of			erea,	[max 5]	
	(e)	su	es correctly orientated and fully itable scale on <i>y</i> -axis; rrect plotting;	labelle	ed (or key provide	d);		
		bars ruled and of same width ;					[4]	
		(ii) 3.	175 / 3.18 / 3.2 ;				[1]	

[Total: 23]