UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2006 question paper

0610 BIOLOGY

0610/02

Paper 2, maximum raw mark 80

These mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. They show the basis on which Examiners were initially instructed to award marks. They do not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the Report on the Examination.

The minimum marks in these components needed for various grades were previously published with these mark schemes, but are now instead included in the Report on the Examination for this session.

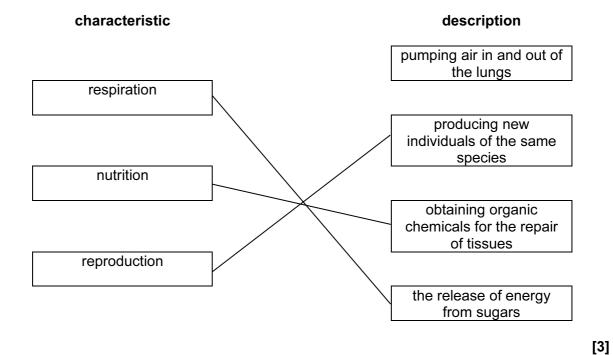
• CIE will not enter into discussion or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the May/June 2006 question papers for most IGCSE and GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



Page 1	Mark Scheme	Syllabus	Paper
	IGCSE – May/June 2006	0610	02

1 (a)



(b) excretion;

growth;

movement; I – locomotion

sensitivity / irritability; [2]

[Total: 5]

Page 2	Mark Scheme	Syllabus	Paper
	IGCSE – May/June 2006	0610	02

2 (a) clear land for agriculture / cattle / crops;

clear land for building / factories / houses;

clear land for roads / airports;

remove timber for use,

Any two – 1 mark each [2]

(b) (i) reduced photosynthesis;

because of less plants;

decreased removal from / increases carbon dioxide levels in atmosphere;

increased release of carbon dioxide into atmosphere;

from burning / increased rotting;

accept other valid points

Any four – 1 mark each [4]

(ii) erosion by rain;

more leaching by rain;

because of lack of canopy;

reduced humus input to soil;

desertification;

Any two – 1 mark each [2]

(iii) disrupt food chains;

knock on effect within food webs / alter balance in food web;

destruction of potential resources;

loss of genetic pool material;

loss of biodiversity;

loss of habitats;

Any two – 1 mark each [2]

[Total: 10]

		10	GCSE – May/June 2006	0610	02
(a)	(i) label	linked to sperm du	uct;		
	(ii) label	linked to ureter;			
	(iii) label	linked to urethra;			
(b)	produce s	perm;			
	produce to	estosterone / male	e hormone;		
(c)	condom p	laced over penis;			
	cutting an	d tying sperm duc	t / vasectomy;		
(d)	male pare	nt / father has XY	sex chromosome;		
	passes ei	ther X or Y to eac	h child;		
	if X then o	child is female;			
	if Y then o	child is male;			
	as female	s always pass X t	o all children;		
	Any three	– 1 mark each			
	Credit rele	evant points show	n on annotated genetic diagram		
					[To
(a)	(i) white	•			
	(ii) Rr;				
(b)	Rr x	Rr	parents;		
	R r	R r	gametes;		
	RR R	r Rr rr	offspring genotypes;		
		ers : 1 white flo			
		ratio of seeds / 13	3 : 44;		
	-	- 1 mark each			
. ,		er : 1 white flower	. ,		
(d)	water;				
	oxygen / a				
	heat / war	mth / suitable tem	perature;		
					[Te

Mark Scheme

Syllabus

Paper

Page 3

	Pag	e 4		Mark Sch		\	Syllabus 0610	Paper 02
				IGCSE – May/s	June 2006)	0610	02
a)	(i)	sun;						
((ii)	evapo	oration;					
	(iii)	transp	piration / eva	potranspiration;				
	(iv)	moist	air rises;					
		coolin	ng happens;					
		conde	ensation;					
		Any to	wo – 1 mark	each				
b)	use	in pho	otosynthesis	/ raw material for	reactions	· ,		
	acts	s as a	solvent;					
	trar	sporta	ation / carries	substances as it	moves in	plant;		
	sup	port / t	turgor;					
	Any	/ two –	- 1 mark eac	1				
c)	(i)	water	absorbed b	y osmosis;				
		cell h	as partially p	ermeable membra	ane;	R – wall		
		conce	entration gra	dient (water) betw	een soil a	and cell;		
		soil w	vith higher (w	ater) concentratio	n;			
		Any tl	hree – 1 mai	k each				
	(ii)	sea w	vater reverse	s concentration (v	vater) gra	dient;		
		plants	s /roots lose	water/ exosmosis	occurs;			
		wilting	g occurs;					
		water	logged soil;					
		no / li	ttle oxygen;					
		root c	cells die / act	ve transport stops	; ;			
		Any tl	hree – 1 mai	k each				
								[T

		Pag	e 5		ark Scheme	Syllabus	Paper	
				IGCSE -	- May/June 2006	0610	02	
;	(a)	(i)	boy ir	n puberty / still growing;				
			musc	le development;				
			protei	in needed for growth and	d repair;			
			30 ye	ear old only needs protei	n for repair;			
			Any th	hree – 1 mark each				[3]
		(ii)	femal	les regularly lose some i	n menstruation;			
			ref. to	difference in size of 14	year olds;			
			iron n	needed for haemoglobin	/ red blood cells;			
			Any to	wo – 1 mark each				[2]
		(iii)	pregn	nant woman needs more	calcium;			
			neede	ed for both herself and fo	or fetus;			
			calciu	um needed for bones / te	eeth;			
			Any to	wo – 1 mark each				[2]
	(b)	mai	ntain t	issues / prevent scurvy;				[1]
							[To	otal: 8]
	(a)	(i)	pass	air through limewater;				
			limew	/ater goes white / milky /	cloudy;			[2]
	(b)	(i)	gluco	se →;	R – ref to oxygen			
			lactic	acid;	R – ref to carbon dioxide			[2]
		(ii)	carbo	on dioxide released;				
			forms	s bubbles of gas in dougl	h;			
			bread	d rises / spongy texture f	ormed;			[3]
		(iii)	heat k	kills yeast;				
			evapo	orates any ethanol;				
			gas b	oubbles expand more;				
			Any to	wo – 1 mark each				[2]

[2]

[Total: 11]

(c) aerobic respiration needs oxygen but anaerobic does not;

aerobic respiration releases more energy than anaerobic;

Page 6	Mark Scheme	Syllabus	Paper
	IGCSE – May/June 2006	0610	02

8 (a)

name of structure	letter label
duodenum	Z;
gall bladder	W;
liver	V;
pancreas	Y;
stomach	X;

[5] **(b) (i)** bile; [1] (ii) adrenaline; A - insulin / glucagon; [1] (c) (i) stomach / X; [1] (ii) duodenum / small intestine / Z; [1] (d) (i) hepatic artery; [1] (ii) red blood cells / haemoglobin; [1] (iii) hepatic vein; [1] (iv) plasma; [1] [Total: 13]