**CAMBRIDGE INTERNATIONAL EXAMINATIONS GCE Ordinary Level** 

# www.papacambridge.com MARK SCHEME for the October/November 2013 series

# **5096 HUMAN AND SOCIAL BIOLOGY**

5096/22

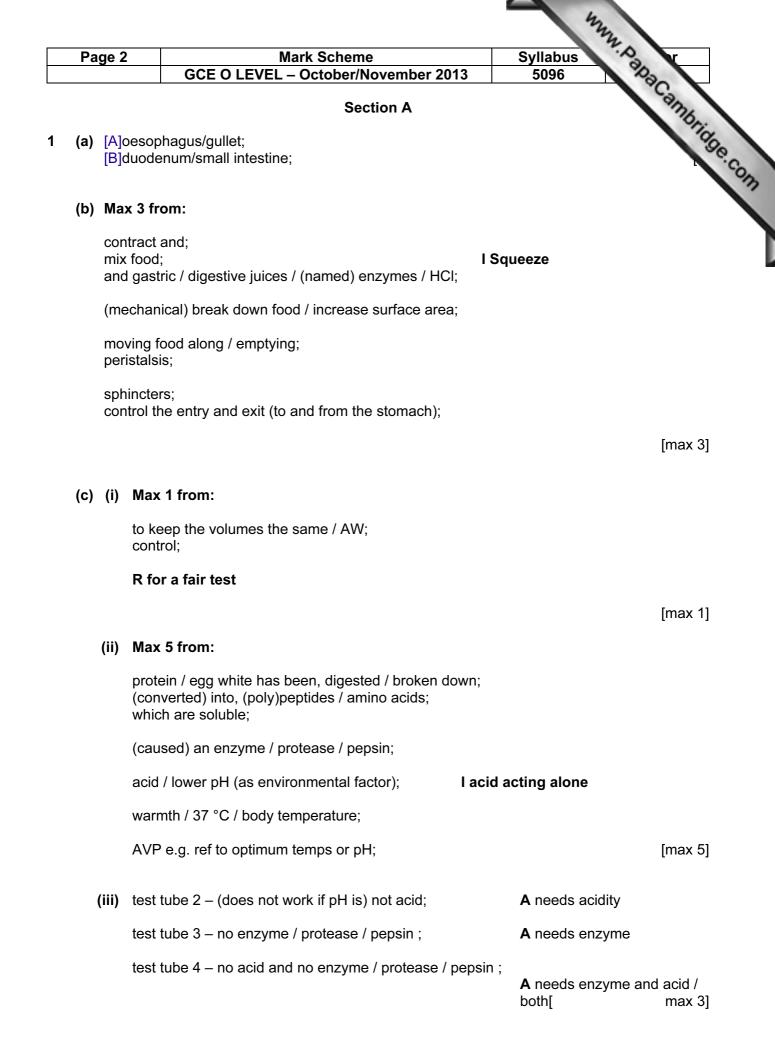
Paper 2, maximum raw mark 100

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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

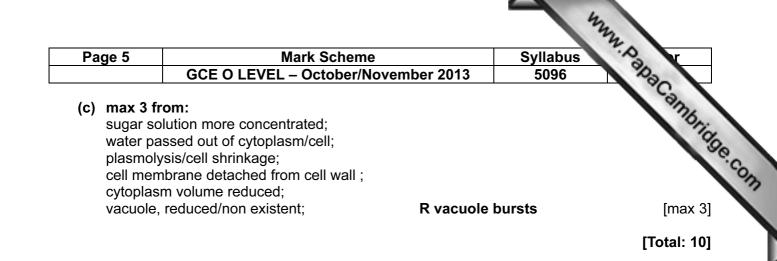
Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.



i aye	e 3		Mark Schen	ne		Syllabus	Q.	r
		GCE O LE	EVEL – October/		2013	5096	No.	2
(iv	, meas ref. to recor desci vary meth	o changing pl rd time to clea ription of how temperature; od of achievi	v to judge endpoir	use alkali / u nt ; eratures ;		ers;	www.pape	anbrids
	differ	rent protein (s	substrate);	-				
	AVP;		,,					
		-	urate (volume) me	asurements	s / repeats			[max 4]
(d) N	lax 2 fro	om:						
İiv	ancreas ver; wall of) s		e / duodenum;		<b>R</b> gall bl	adder	ןז	[max 2] <b>`otal: 20]</b>
(a) N	lax 3 fro	om:						
a	t certain	places on the	e retina there are	no light ser	nsitive cells	s A/W ;		
(t	he eye h	has) blind sp	oot;			l optic n	erve	
n	ot the sa	ame side for e	each eye A/W ;					
th	ie image	e falls on the l	blind spot at a ce	rtain distanc	ce only A/\	W ;		[max 3]
(b) N	lax 3 fro	om:						
e	/ide(r) fie		ther's blind spot; ance;					

Pa	ge 4	Mark Scheme	Syllabus Syllabus	
		GCE O LEVEL – October/November 2013	5096	
(a)	41% +	68% <b>Need both correct for the mark</b> .	Cal	nbri
(b)	no mark	for choice of meal –B	Syllabus 5096 BhaCal	2
	max 2 fr	rom:		
	fats with	it has 68% / >50% from carbohydrates; in range;		
	A nas to	o much fat ;	[m	ax 2]
(c)	(i) not (	digested / not absorbed / egested ;	I not used / excreted	[1]
	(ii) max	2 from:		
	any	(named) vitamin or (named) mineral or water ;;		[2]
			[Tota	al: 6]
(2)	max 2 fr	om.		
(a)				
	diffusion from hig via tissue	h to low concentration / down concentration gradient;		
	through AVP;	muscle cell membrane;	[m	ax 2]
(b)		any symbols used (e.g. mixture of words and symbols) ny symbols if all the words are given		
	[glucose	e] + oxygen; → carbon dioxide; + water or water; + carbon dioxide;		ax 3]
			[Tot	al: 5]
<i>.</i> .				
(a)	D	cell wall cell membrane		
		cytoplasm nucleus		[4]
	1			[4]
(b)	max 3 fr			
		/ movement, of water ;		
		ell / cytoplasm / down water concentration AW / potentia partially permeable (cell) membrane; <b>A semi-perme</b>		
	anougii	paraany permeasic (cell) membrane, A semi-perme		



# (6) max 8 from:

### stage 1

(tip head back) to open airways; *idea of* making sure that the tongue is not obstructing flow of air ; *idea of* making sure that debris is not obstructing the flow of air ;

### stage 2

(pinching nose) idea of ensuring air goes down windpipe / stop air coming out of nose ;

## stage 3

(blowing air) increasing pressure so air enters the lungs; *idea that* oxygen is in expired air ; air / oxygen enters, lungs / alveoli; hand on chest to check that air is entering A/W;

### stage 4

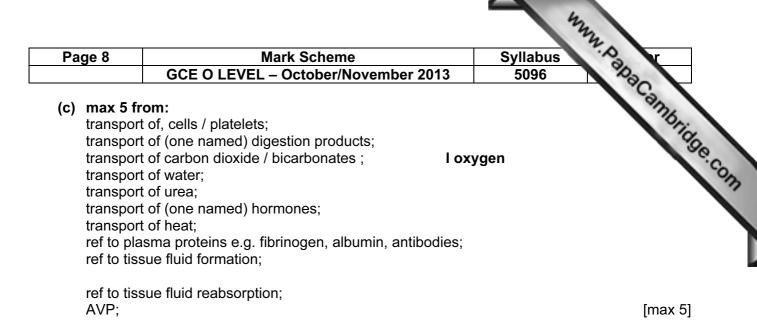
(removing mouth) person can exhale; weight of rib cage causes exhalation; removal of carbon dioxide; hand on chest to check that air is leaving A/W;

max 8

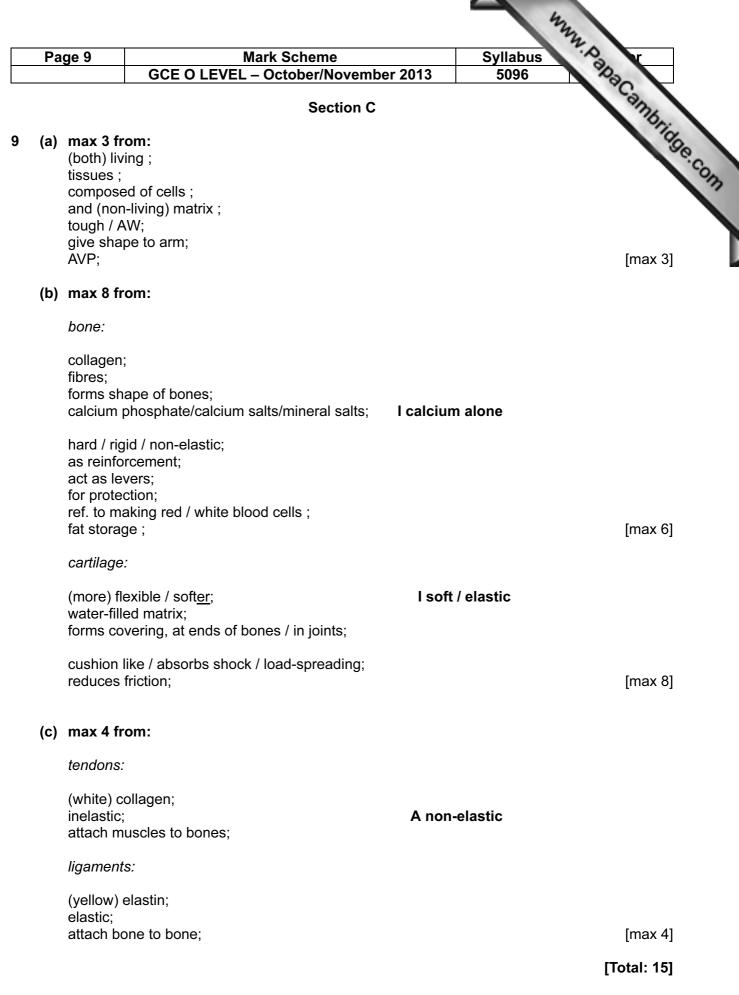
[Total: 8]

Page	6	Mar	nrk Scheme	्	Syllabus	·A. I
¥			October/November 201		5096	No.
			Section B			Canny.
allow one	ce only	y.				N. PapaCambrid
(a) (i	) bra	in and nervous syste	<u>èm</u>			
(/ )	max	x 7 from:				
	(sho	ort-term :)				
	idea	<i>a of</i> light headed / euph	horia <u>;</u>			
			on neurone membranes			<u>-</u>
		a of longer reaction time to passage of impulse	ne / slower decisions / im e / synapses:	pulses slov	wer / impaired	i judgement ;
	loss	s of consciousness;		<u>_</u>		
	loss	of coordination / musc	cular control / slurred sp	eech;		
		-	od changes (happy, s	sad, angry	y, confused,	sexy, sleepy
		pressive); mory loss;				
		-	- 4.			
	den	ydration / diuretic effec	зt;			
	han AVF		eadache / sickness / ups	et stomach	ı / dizziness);	
		ng-term:)				
	bra	in shrinkage;				
		od vessels (possibly) le	eaky stroke;			
	slee	ep patterns altered;				
	add	liction ;				
	AVF	). ,				[max 7
						L
(ii)	•	er x 4 from:				
	rem	noves / converts alcoho				
	(lim	ited) removal rate of or	ne unit per hour ;			
	(bre	∍akdown makes) toxic r	products / acetaldehyde	∍ / ethanal;		
	-	y deposits / fatty liver ;				
	-	hosis;				
	(alc	coholic) hepatitis;				
	live	r cancer;				
	AVF	·>:				
						[max 4

Paç	ge 7		Syllabus
		GCE O LEVEL – October/November 2013	5096 23
	alcohol max 4 fr	and baby in utero rom:	ambrid
	through	e to maternal <u>and</u> fetal blood; placenta; f placenta is not a barrier for alcohol;	Syllabus 5096 Papacambrid
		birth-weight / reduced growth; miscarriage;	
	behaviou	, IQ / intellectual ability / brain development / head size; ur problems/ learning difficulties; facial features or described;	
	fetal alco	phol syndrome;	
	AVP;		[max 4]
			[Total: 15]
	White blo ref. to ph lymphoc	rom: od cells - transport oxygen; - transport carbon dioxide; ood cells - defence, against / 'fight', infections or pathog hagocytes / phagocytosis / description; ytes produce antibodies ; - (antibodies ) counteract antigens ; g. produce antitoxins	en; [max 5]
	fibrinoge soluble t fibres tra	ood clotting;	
		s, blood loss / haemorrhage; s, infection / entry of pathogens;	
		. ref. of calcium ions / vitamin K	[max 5



[Total: 15]



\* allow once only

	Pag	je 10	0 Mark Scheme	Syllabus	· A
			GCE O LEVEL – October/November 201	3 5096	Star.
0	(a)	ma	x 5 from:		N. PapaCambrid
•	(4)		htract;		10,
			eps / triceps / other muscles;		19
			agonistic action ;		
			gin / point of attachment fixed; ertion / (other end) moves when muscle under tensi	on:	
			med bone moved by a named muscle ;	011,	
		hor	nes act as levers;		
			kion / extension (straighten) / rotation;		
			ergy from respiration;		[max 5]
	(b)	(i)	max 5 from: voluntary / conscious / thought involved / not autor	matic ·	
			(action) initiated in brain / cerebrum;		
			impulses passed; I m	essages/signals	
			synapse / synaptic transmission / detail explained;	*	
			to other side of body / via motor area;		
			down spinal cord;		
			to intermediate / relay neurone; to motor neurone;		
			to muscle / effector; e.g. biceps/triceps;		
			another impulse;		
			to antagonistic muscle/other named; repeated;		
			AVP ; out at root / part of spinal nerve/peripheral n	S	[max 5]
		(ii)	max 5 from:		
		. ,	reflex / no thought involved / automatic / involuntar	ry / not under conscious	control;
			receptor detects the heat stimulus;		
			impulse passed along sensory neurone;		
			(spinal) nerve ; to spinal cord;		
			to intermediate / relay neurone;		
			synapse / synaptic transmission / detail explained;	*	
			to motor neurone;		
			to muscle / effector / biceps;		
			quick(er); single action / once only;		[max 5]