Location Entry Codes

www.papaCambridge.com As part of CIE's continual commitment to maintaining best practice in assessment, CIE has begun to use different variants of some question papers for our most popular assessments with extremely large and widespread candidature, The question papers are closely related and the relationships between them have been thoroughly established using our assessment expertise. All versions of the paper give assessment of equal standard.

UNIVERSI

International

The content assessed by the examination papers and the type of questions are unchanged.

This change means that for this component there are now two variant Question Papers. Mark Schemes and Principal Examiner's Reports where previously there was only one. For any individual country, it is intended that only one variant is used. This document contains both variants which will give all Centres access to even more past examination material than is usually the case.

The diagram shows the relationship between the Question Papers, Mark Schemes and Principal Examiner's Reports.

Mark Scheme **Question Paper** Principal Examiner's Report Introduction Introduction Introduction **First variant Question Paper** First variant Mark Scheme First variant Principal Examiner's Report Second variant Question Paper Second variant Mark Scheme Second variant Principal Examiner's Report

Who can I contact for further information on these changes?

Please direct any questions about this to CIE's Customer Services team at: international@cie.org.uk

www.papacambridge.com MARK SCHEME for the October/November 2007 question paper

0610 BIOLOGY

0610/03

Paper 3 (Extended Theory), maximum raw mark 80

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.

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.

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

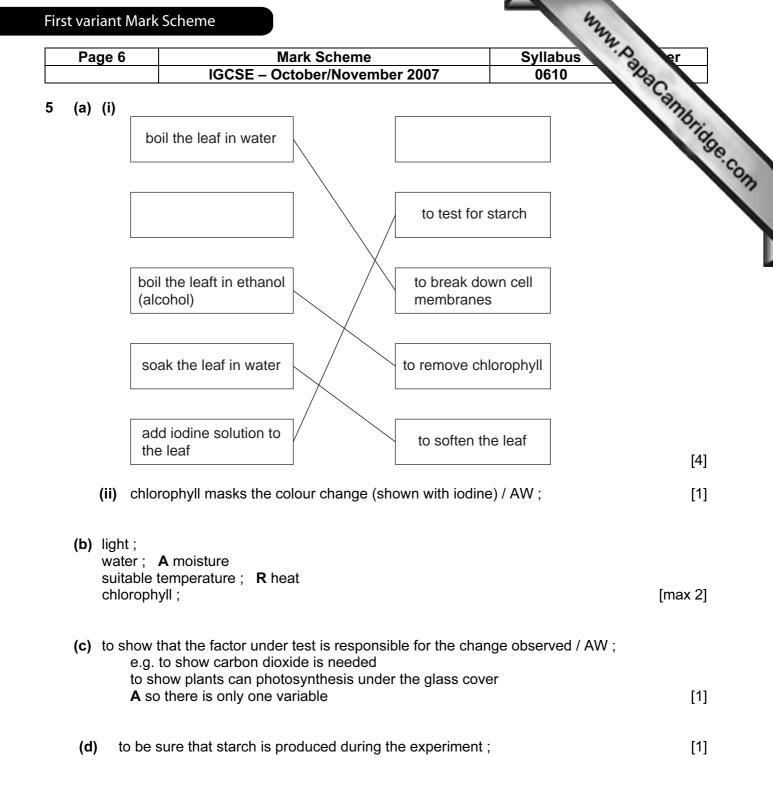
CIE is publishing the mark schemes for the October/November 2007 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

	ge 2			Mark Scher		Syllabus	Par er
			IGCSE	– October/Nov	vember 2007	0610	10g
(a)	(i)	cellu (sap nucle nucle mitod endc amyl	/ large / perma eus / nuclear m eolus ; chondria ; plasmic reticuli oplasts ; A sta	A 'not made o nent) vacuole(s embrane / nucl um / Golgi ; arch, grains / gr	f, murein / peptidogly s) ; A tonoplast ear envelope ; R DI ranules ar chromosome(s) ;	/can' NA / RNA	Papacambrida
	(ii)	cytop ribos chror glyco	brane ; blasm ; omes ; mosomes ; A ogen granules ; oplets ;		A' R DNA unqualifie	d	[max 2]
(b)	yog sou brea alco Quo	ohol / orn / n	; any named alco nycoprotein ; I protein ;	oholic drink ;	tofu ; soya sauce ; sauerkraut ; vinegar ; tapai ; tempe / tempeh ; kimchee ;		[max 2]
(c)	reje	ect ba	cteria becoming	g immune and a	antibiotics causing m	utation	
	1 2 3 4 5	stron <u>antib</u> antib	iotic kills bacte iotic is, selectiv	ria except those	/ enzyme to breakdo e that are , mutant / r A ref to (natural) se nore mitosis	esistant ;	; [max 3]
(d)	this	may	be answered w	vith reference to	o insulin		
(d)	this 1 2 3 4 5 6 7 8	fast r ident smal singl copy make have used	reproduction ra ical offspring / l number of gei e cells ; / use, genes fr es, protein / nai plasmids ;	te / AW ; cloning ; nes ; om, other orga med protein, fro	o insulin nisms / viruses ; om another organism ria / easy to put gene		
(d)	1 2 3 4 5 6 7	fast r ident smal singl copy make have used A [reproduction ra ical offspring / l number of gen e cells ; / use, genes fr es, protein / nan plasmids ; to transfer gen DNA for gene	te / AW ; cloning ; nes ; rom, other orga med protein, fro ne(s) into bacte	nisms / viruses ; om another organism	e(s) in bacteria ;	[max 2]

Page 3	Mark Scheme Syllabus	er
	IGCSE – October/November 2007 0610	
(a) tempe press	Mark Scheme Syllabus IGCSE – October/November 2007 0610 erature / heat / cold ; ure ; 'sharpness ; re / touch ; Image: Cold is in the second s	amb.
•	sharpness ;	19
	re / touch ; [i	max
(b) gangl		
grey r	matter (of spinal cord) ;	[2]
(c) (i) e	lectrical ; A electrochemical / movement of ions / electric current	
	R electrochemical / movement of ions / electric current R electrons / electricity	[1]
(11)		
(ii) m	nyelin / (fatty) sheath ;	[1]
• •	ward two marks if correct answer with units is given	
it	not, award one mark if	
•	correct answer with no units incorrect answer with correct units	
•	no answer but correct working	
•	incorrect answer but correct working	
1	.5 / 0.02 ;	
	5, metres per second or m/s or m s ⁻¹ or m sec ⁻¹ ;	[2]
(1)	(-2)	
(iv) s	ynapse(s) / gap(s) (between neurones) ;	[1]
(d) (i) (V / biceps) contracts ;	
	rm / elbow, flexes / bends / pulls away from stimulus / AW ;	[2]
(ii) a	llow ecf from (i)	
	f muscle not identified assume it is V	
+,	isana (muada) / (muada) M (antaganistia muada / appasing muada, contracta ;	
	riceps (muscle) / (muscle) W / antagonistic muscle / opposing muscle, contracts ; nuscle V relaxes / passive stretching of V ;	
	A ref to W as antagonistic if already said it contracts	
	R 'V relaxes that causes contraction of W'	[2]
	ITot	al: 13]

	4	Mark Scheme	Syllabus er
		IGCSE – October/November 2007	0610
م har	\ 'mad rmful /	of waste (products) of, metabolism / chemical react e within cells' as alternative to metabolism toxic / poisonous / AW ; e(s) in excess of requirements ;	Syllabus 0610 ions ;
(b) (i)	acce	pt statements from the question instead of letter pt letter written on the structure (no label line) or ne t if letter used on two or more areas and one is inco	earby if clear
	<i>glom</i> R on	n cortex / white area between fibrous capsule ar nerulus but not anywhere else on tubule renal artery <i>including after it divides</i> ; ureter ;	nd stippled medulla ; <i>allow on</i>
(ii)	due ref to smal two e	o blood pressure ; to the heart / AW ; o capillaries ; A glomerulus I molecules forced out (of blood) ; examples ; urea, water, amino acids, glucose / sugar, salts / ion any named hormone / spent hormone	
(iii)		any two named, ions / hormones as the two examplose mark only the first two answers if more than two	
	<u>activ</u> A <u>se</u>	sion ; <u>e</u> uptake / <u>active</u> transport ; <u>lective</u> , reabsorption / uptake ; [max 2] r mark only the first answer if more than one giver	n
		osis ; A diffusion	[3]
	0011		[Total: 12]

Page 5	Mark Scheme	Syllabus	A er
-	IGCSE – October/November 2007	0610	No.
(is cut or (produce	perm are stored before ejaculation)E ;tied during a vasectomy)B ;es fluid for sperm to swim in)C ;neiosis occurs)F ;		Papa Cambridge
(b) (i) <u>uret</u> ł	<u>ıra</u> ;		[1]
diffic pain neec dribb incre	action in flow of urine / difficult to urinate ; cult to empty bladder ; (when urinating) ; ding to urinate more often ; bling / spraying, of urine ; eased risk of infections of, bladder / kidney / pro cult to ejaculate ; A difficulty in release of, spe		[max 2]
(c) many exa	amples that candidates may give		
named st	tructure ;		
how dian	neter is reduced ;		
purpose	• • •		[3]
causes th increases ref to in v <i>female</i> male	I / clomiphene / clomid ; R oestrogen he ovaries to produce more eggs / AW ; s chance of fertilisation ; /itro fertilisation ; hCG ; stimulates follicles to <u>release</u> eggs ; progesterone ; causes, lining of uterus / endometrium, to thick increases chance of implantation ; hCG ; to stimulate testosterone production ; FSH / LH / testosterone ;	-	
	stimulates sperm production ;	max 3	
	<i>l methods of birth control</i> n / progesterone ; eptive) <u>pill</u> / patch / injection / implant ; R table FSH release / AW ;	et / medicine	
(contrace prevents prevents prevents (progeste inhibit sp prevents	, egg / follicle, development ; , ovulation / release of eggs ; A no egg to be erone only pills) erm movement through cervix / plug of mucus implantation ;		
(contrace prevents prevents prevents (progeste inhibit sp prevents kills sper	, egg / follicle, development ; , ovulation / release of eggs ; A no egg to be erone only pills) erm movement through cervix / plug of mucus		[6]



(e) correct result for starch test and reason needed for each mark reject crossed ticks

stage	leaf from plant	starch test (✓ or ×)	reason
2	A and B	×	plants have had no light for photosynthesis / destarched / AW ;
	Α	×	plant has had no carbon dioxide for photosynthesis ;
4	В	√	plant has had, carbon dioxide / all conditions, for <u>photosynthesis</u> ;

Pa	ge 7		Marl	<pre>Scheme</pre>		Syllabus	er er
	•		IGCSE – Octo	0610	123		
(f)	plant i carbo	n dioxide	R 'plant begins	to respire' / 'instea orrect equation for ses, from plant ;	•	bires' respiration	MMN. Papa er [max [Total: 15]
(a)	(living many intera	together) habitats ; cting / inte	in same, area / erdependent / AV	imals and plants / place / environmer V ; A food chains / non-living, factor	ht; R h / food w	abitat veb	tions / AW ; [max 2]
(b)	• •		cellent food for h port / fishing, for				[2]
(c)	(produ (herbi (carni	vore) c	algae ; sichlid fish + prav vile perch + hum				[3]
(d)	2 le 3 (t 4 pl 5 (a 6 us 7 lo A	ess light fo herefore) lants stop aerobic) ba se up oxy w levels o W	plants die ; producing oxyge acteria / decomp gen (in respiration of oxygen cause	synthesis ; A mor	ad plants cate ;	3;	ygen to breathe / [max 4]
	8 ba	acteria pro					IIII MAA II
	8 ba	acteria pro			.,		[Total: 11]

cellulose cell wall; A 'not made of, murein / peptidoglycan' (sap / large / permanent) vacuole(s); A tonoplast nucleous / nuclear membrane / nuclear envelope; R DNA / RNA nucleolus; mitochondria; endoplasmic reticulum / Golgi; amyloplasts; A starch, grains / granules more than one chromosome / linear chromosome(s); [4] (ii) membrane; cytoplasm; ribosomes; [4] (ii) membrane; cytoplasm; [4] (iii) membrane; (cytoplasm; [7] oil droplets; fofu; [7] [7] (b) cheese; tofu; [7] yoghurt; soya sauce; soya sauce; sour milk; bread; vinegar; alcohol / any named alcoholic drink; tapa; Quorn / mycoprotein; tempe / tempeh; [max 2] (c) reject bacteria becoming immune and antibiotics causing mutation 1 mutation / mutant; 2 stronger wall / less permeable wall / enzyme to breakdown antibiotic / AW; 3 antibiotic kills bacteria except those that are, mutant / resistant; 4 antibiotic is, selective agent / AW; A ref to (natural) selection 5 (resistant) bacteria reproduce; ignore mitosis	endeplacime reaction,	DaCambridg
 amyloplasts; A starch, grains / granules more than one chromosome / linear chromosome(s); [4] (ii) membrane; cytoplasm; ribosomes; A 'strands of DNA' R DNA unqualified glycogen granules; oil droplets; [max 2] (b) cheese; tofu; soya sauce; sour milk; susaurkraut; bread; vinegar; alcohol / any named alcoholic drink; tapai; Quorn / mycoprotein; tempe / tempeh; single cell protein; kimchee; [max 2] (c) reject bacteria becoming immune and antibiotics causing mutation mutation / mutant; stronger wall / less permeable wall / enzyme to breakdown antibiotic / AW; antibiotic is, selective agent / AW; A ref to (natural) selection (resistant) bacteria reproduce; ignore mitosis [max 3] (d) this may be answered with reference to insulin fast reproduction rate / AW; single cells; copy / use, genes from, other organisms / viruses; makes, protein / named protein, from another organism; have plasmids; used to transfer gene(s) into bacteria / easy to put gene(s) in bacteria; A DNA for gene 	endeplacime reaction,	ambrios
 cytoplasm ; ribosomes ; chromosomes ; A 'strands of DNA' R DNA unqualified glycogen granules ; oil droplets ; (b) cheese ; yoghurt ; sour milk ; bread ; alcohol / any named alcoholic drink ; alcohol / any named alcoholic drink ; tapai ; Quorn / mycoprotein ; single cell protein ; (c) reject bacteria becoming immune and antibiotics causing mutation 1 mutation / mutant ; stronger wall / less permeable wall / enzyme to breakdown antibiotic / AW ; antibiotic kills bacteria except those that are , mutant / resistant ; antibiotic is, selective agent / AW ; antibiotic is, selective agent / AW ; f antibiotic is, selective agent / AW ; antibiotic is, selective agent / AW ; antibiotic is, selective agent / AW ; antibiotic is, selective agent / AW ; f ast reproduction rate / AW ; and the may be answered with reference to insulin f ast reproduction rate / AW ; asmall number of genes ; single cells ; copy / use, genes from, other organisms / viruses ; makes, protein / named protein, from another organism ; have plasmids ; used to transfer gene(s) into bacteria / easy to put gene(s) in bacteria ; A DNA for gene 		[4]
 yoghurt ; soya sauce ; sour milk ; soya sauce ; sour milk ; sauerkraut ; bread ; vinegar ; alcohol / any named alcoholic drink ; tapai ; Quorn / mycoprotein ; tempe / tempeh ; single cell protein ; kimchee ; [max 2] (c) reject bacteria becoming immune and antibiotics causing mutation mutation / mutant ; stronger wall / less permeable wall / enzyme to breakdown antibiotic / AW ; antibiotic kills bacteria except those that are , mutant / resistant ; antibiotic is, selective agent / AW ; A ref to (natural) selection (resistant) bacteria reproduce ; ignore mitosis [max 3] (d) this may be answered with reference to insulin fast reproduction rate / AW ; single cells ; copy / use, genes from, other organisms / viruses ; makes, protein / named protein, from another organism ; have plasmids ; used to transfer gene(s) into bacteria / easy to put gene(s) in bacteria ; A DNA for gene 	cytoplasm ; ribosomes ; chromosomes ; A 'strands of DNA' R DNA unqualified glycogen granules ;	[max 2]
 1 mutation / mutant; 2 stronger wall / less permeable wall / enzyme to breakdown antibiotic / AW; 3 antibiotic kills bacteria except those that are , mutant / resistant; 4 antibiotic is, selective agent / AW; A ref to (natural) selection 5 (resistant) bacteria reproduce; ignore mitosis [max 3] (d) this may be answered with reference to insulin 1 fast reproduction rate / AW; 2 identical offspring / cloning; 3 small number of genes; 4 single cells; 5 copy / use, genes from, other organisms / viruses; 6 makes, protein / named protein, from another organism; 7 have plasmids; 8 used to transfer gene(s) into bacteria / easy to put gene(s) in bacteria; A DNA for gene 	yoghurt ;soya sauce ;sour milk ;sauerkraut ;bread ;vinegar ;alcohol / any named alcoholic drink ;tapai ;Quorn / mycoprotein ;tempe / tempeh ;	[max 2]
 2 stronger wall / less permeable wall / enzyme to breakdown antibiotic / AW ; 3 <u>antibiotic kills</u> bacteria except those that are , mutant / resistant ; 4 antibiotic is, selective agent / AW ; A ref to (natural) selection 5 (resistant) bacteria reproduce ; <i>ignore mitosis</i> [max 3] (d) this may be answered with reference to insulin 1 fast reproduction rate / AW ; 2 identical offspring / cloning ; 3 small number of genes ; 4 single cells ; 5 copy / use, genes from, other organisms / viruses ; 6 makes, protein / named protein, from another organism ; 7 have plasmids ; 8 used to transfer gene(s) into bacteria / easy to put gene(s) in bacteria ; A DNA for gene 	(c) reject bacteria becoming immune and antibiotics causing mutation	
 fast reproduction rate / AW ; identical offspring / cloning ; small number of genes ; single cells ; copy / use, genes from, other organisms / viruses ; makes, protein / named protein, from another organism ; have plasmids ; used to transfer gene(s) into bacteria / easy to put gene(s) in bacteria ; A DNA for gene 	 stronger wall / less permeable wall / enzyme to breakdown antibiotic / AW; <u>antibiotic kills</u> bacteria except those that are , mutant / resistant; antibiotic is, selective agent / AW; A ref to (natural) selection 	[max 3]
 identical offspring / cloning ; small number of genes ; single cells ; copy / use, genes from, other organisms / viruses ; makes, protein / named protein, from another organism ; have plasmids ; used to transfer gene(s) into bacteria / easy to put gene(s) in bacteria ; A DNA for gene 	(d) this may be answered with reference to insulin	
R product / protein, taken nom, numan / other organism $\lim_{n \to \infty} z_n$	 2 identical offspring / cloning ; 3 small number of genes ; 4 single cells ; 5 copy / use, genes from, other organisms / viruses ; 6 makes, protein / named protein, from another organism ; 7 have plasmids ; 8 used to transfer gene(s) into bacteria / easy to put gene(s) in bacteria ; A DNA for gene 	[may 2]
	R product / protein, taken from, numan / other organism	[max ∠j

Pa	age 9				Mark Sc				abus	er er
			10	GCSE –	October/	November	r 2007	06	510	Da
(a)	(i)	amyl diges wate lubrid	ase / pty its / brea r for, enz	alin ; ks down :yme acti	ion / hydr	to maltose) olysis ;); r to chew);			Papa cambrid
	(ii)	surfa for e	ce area nzymes ;	increase	s ;	ood to redu	ice particle s	ize ;		[max 3]
(b)	proo acio den	duce d, diss tine is	acid ; R olves / A expose	ʻsugar ti W, enan d ;	urns to ac nel ;	A sweets cid' / 'sugar idly, (than e		nks / AW		[max 3]
. ,	proo acio den den	duce d, diss tine is tine, s	acid ; R olves / A expose ofter / d	ʻsugar tu .W, enan d ; ssolves	urns to ac nel ;	sid' / 'sugar idly, (than e	is acidic'	nks / AW		[max 3] [1]
(c)	prod acic den den (flud peo can fluo only unk fluo bon	duce a d, diss tine is tine, s tine, s pride) ple da choo ride c / bene nown ride, ' es be	acid ; R olves / A expose softer / di hardens o not hav se to use an cause fits child effects / not healt come, w	'sugar tu W, enan d ; ssolves / strengt e a choid to toothpa e, mottlin ren / doe side effe hy' eaker / n	urns to ac nel ; more rapi thens, <u>en</u> thens, <u>en</u> ce if fluori aste with f g / discol	idly, (than e idly, (than e <u>amel</u> ; ide is in the iluoride inst ouring, of to nefit adults mful to hea	e water / AW tead ; ;	;	amounts ;	

[Total: 13]

Pag	e 10			Mark Scheme		Syllabus	P. er
			IGCSE -	- October/Nove	mber 2007	0610	Day 1
	A ' harm	mad nful /	e within cells' as toxic / poisonou	alternative to m	m / chemical read netabolism	ctions ;	Papacambrida
(b)	i	acce	pt letter written		instead of letter (no label line) or ı reas and one is in	nearby if clear	
	(<i>glom</i> R on	erulus but not a	area between nywhere else on luding after it div	tubule	and stippled medulla	a ; allow on [3]
		0 011					[~]
	(due t ref to smal two e ເ	examples ; urea, water, ami	/ ; glomerulus ed out (of blood)	e / sugar, salts / i	ions / minerals, uric a	icid, ammonia,
		A a	any two named,	ions / hormones	as the two exam	ples	[max 3]
(iii) g	gluco	ose mark only	he first two ansv	vers if more than	two given	
	<u>i</u>	activ	sion ; <u>e</u> uptake / <u>active</u> <u>ective</u> , reabsor		[max 2]		
		wate	r mark only the	e first answer if n	nore than one give	en	
	(osmo	osis ; A diffusio	n			[3]
							[Total: 12]

 (is cut or ited during a vasectomy) (produces fluid for sperm to swim in) (produces fluid for sperm to swim in) (i) (i) urethra; (ii) reduction in flow of urine / difficult to urinate; (iii) reduction in flow of urine / difficult to urinate; (iii) reduction in flow of urine / difficult to urinate; (iii) reduction in flow of urine / difficult to urinate; (iii) reduction in flow of urine / difficult to urinate; (iii) reduction in flow of urine / difficult to urinate; (iii) recased risk of infections of, bladder / kidney / prostate / urethra; (increased risk of infections of, bladder / kidney / prostate / urethra; (iii) rereased risk of infections of, bladder / kidney / prostate / urethra; (iii) recased risk of infections of, bladder / kidney / prostate / urethra; (iii) recased risk of infections of, bladder / kidney / prostate / urethra; (iii) recreased risk of infections of, bladder / kidney / prostate / urethra; (iii) recreases that candidates may give named structure; how diameter is reduced; purpose; (3) (c) fertilisty drugs FSH / LH / clomiphene / clomid; R oestrogen causes stimulates follicles to release eggs; progesterone; causes, lining of uterus / endometrium, to thicken; A maintains lining increases chance of implantation; male hCG; to stimulate testosterone production; FSH / LH / testosterone; stimulates sperm production; FSH / LH / ustosterone; stimulates sperm production; FSH / LH / testosterone; (contraceptive) gill / patch / injection / implant; R tablet / medicine prevents. FSH release / AW; prevents. egg / follicle, development; prevents. engl / totlow; / plug of mucus at cervix; prevents sperm novement through cervix / plug of mucus at cervix; prevents sperm n	 (ii) reduction in flow of urine / difficult to urinate ; difficult to empty bladder ; pain (when urinating) ; needing to urinate more often ; dirlibiling / spraying, of urine ; increased risk of infections of, bladder / kidney / prostate / urethra ; difficult to ejaculate ; A difficulty in release of, sperm / semen [ma: (c) many examples that candidates may give named structure ; how diameter is reduced ; purpose ; (d) fertility drugs FSH / LH / clomiphene / clomid ; R oestrogen causes the ovaries to produce more eggs / AW ; increases chance of fertilisation ; ref to in vitro fertilisation ; remain to the ovaries to produce more eggs ; stimulates follicles to <u>release</u> eggs ; progesterone ; causes, lining of uterus / endometrium, to thicken ; A maintains lining increases chance of implantation ; male hCG ; to stimulate testosterone production ; FSH / LH / testosterone ; stimulates sperm production ; FSH / LH / testosterone ; max 3 	_			1													1	m.			
 (i) reduction in flow of urine / difficult to urinate ; difficult to empty bladder ; pain (when urinating) ; needing to urinate more often ; dribbling / spraying, of urine ; increased risk of infections of, bladder / kidney / prostate / urethra ; difficult to ejaculate ; A difficulty in release of, sperm / semen [max 2] (c) many examples that candidates may give named structure ; how diameter is reduced ; purpose ; (d) fertility drugs FSH / LH / clomiphene / clomid ; R oestrogen causes the ovaries to produce more eggs / AW ; increases chance of fertilisation ; ref to in vitro fertilisation ; female hCG ; stimulates follicles to <u>release</u> eggs ; progesterone ; causes, lining of uterus / endometrium, to thicken ; A maintains lining increases chance of implantation ; male hCG ; to stimulate testosterone production ; FSH / LH / testosterone ; stimulates sperm production ; FSH / LH / testosterone ; causes, lining of uterus / endometrium, to thicken ; A maintains lining increases chance of implantation ; male hCG ; to stimulate testosterone production ; FSH / LH / testosterone ; stimulates sperm production ; FSH / LH / testosterone ; stimulates sperm production ; FSH / LH / testosterone ; stimulates sperm production ; prevents FSH release / AW ; prevents FSH release / AW ; prevents FSH release of eggs ; A no egg to be fertilised (progesterone only pills) inhibit sperm movement through cervix / plug of mucus at cervix ; prevents implantation ; kills sperm in, vagina / cervix ; prevents sperm, reaching egg / entering oviduct ; max 3 [6] 	 (i) reduction in flow of urine / difficult to urinate ; difficult to empty bladder ; pain (when urinate more often ; drihbiling / spraying, d'urine ; increased risk of infections of, bladder / kidney / prostate / urethra ; difficult to ejaculate ; A difficulty in release of, sperm / semen [ma: (c) many examples that candidates may give named structure ; how diameter is reduced ; purpose ; (d) fertility drugs FSH / LH / clomiphene / clomid ; R oestrogen causes the ovaries to produce more eggs / AW ; increases chance of fertilisation ; ref to in vitro fertilisation ; fermale hCG ; causes, thing of uterus / endometrium, to thicken ; A maintains lining increases chance of implantation ; male hCG ; to stimulate stosterone production ; FSH / LH / testosterone ; stimulates sperm production ; rest of simulate testosterone production ; prevents FSH release / AW ; prevents, coulation / release of eggs ; A no egg to be fertilised (progesterone only pills) inhibit sperm movement through cervix / plug of mucus at cervix ; prevents implantation ; kills sperm in, vagina / cervix ; prevents sperm, reaching egg / entering oviduct ; max 3 	Pag	ge 1 [.]	1			000					har	2007					IS	1	2º	er	
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				STO SC
(a)			t gaseous exchange surface is here gases move between organism and its environment ;	labus 610 Papacambrid
(b)	cap	oillary	e cell thick / short distance ; A ref to, cuticle / epidermis / blood, near to, surface / epidermis ; ssolve in layer of, water / mucus ;	[max 2]
(c)	(i)	activ prov vacu wate hydr	ens testa ; vation of enzymes ; vide medium for transport / AW ; uolation of cells ; A ref to cytoplasm er is a solvent ; rolysis / breakdown of, food stores ; involved in reactions R photosynthesis	[max 1]
	(ii)	form to m trans activ	wth / development (of plumule / radicle / cells) ; nation of, cytoplasm / organelles / membranes / cell walls / na netabolise food stores / AW ; sport ; we uptake of, minerals / ions ; division / mitosis ;	amed molecule ; [max 1]
(d)	(i)	due carb volu redu	bil droplet) moves, towards the peas / to the left / towards the to uptake of oxygen by seeds ; bon dioxide produced is absorbed by soda lime ; me of oxygen absorbed = volume of carbon dioxide produce uction in gas volume in boiling tube ; uction in pressure of gas in tube ;	
	(ii)	2 a 3 m 4 o 5 ra 6 re 7 re	arry out at, different temperatures / stated temperatures ; illow peas to adjust to (new) temperature ; neasure distance travelled by oil droplet ; over known period of time ; ate = distance divided by time ; A cm min ⁻¹ emove bung to allow fresh air in to apparatus / replace soda epeats at each temperature ; named variable to be controlled ; e.g. mass of, seeds / soda I	
	(iii)	more	tic energy influenced by temperature ; e frequent collisions at higher temperatures / fewer collisions piration is controlled by enzymes / AW ;	s at low temperature ;
		•	ymes denatured by high temperatures ;	[max 2]