MARK SCHEME for the October/November 2007 question paper

0610 BIOLOGY

0610/05

Paper 5 (Practical Test), maximum raw mark 40

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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.

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UNIVERSITY of CAMBRIDGE International Examinations

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	IGCSE – October/November 2007	0610	05				
bord	<i>table design</i> border and columns and rows with ruled lines ; columns/rows , with headings ;						
<i>if fili</i> time time	filling in their table if film did not clear, (A) 'no change' or an explanation for missing time time for pH 4 ; time for pH 8 ; suitable units (in heading or in each box) ; [3]						
L S P	axes correctly orientated ; labels on axes + units for time ; even scale (should include 0) ; plot 5 points correctly ; ruled line point to point of the plotted 5 points (no	t pH 4 and 8) ;	[5]				
(ii) mos	t active/optimum/works best , at pH 7; (A)	utral hin 6.5 – 8 as a range					
less	ess active/slower , at , acid/low , pH ; ess active/slower , at , alkaline/high , pH ; denatured enzyme ; (A) use of figures to make the (A) description						
(iii) own	own results plotted ; <i>look at their results table ~ to within half a square</i> [N.B. tube A (+C) is pH8, tube B (+D) is pH4] [1]						
2	2 different <u>concentration</u> of enzyme ;						
	carried out at <u>different</u> temperature ; (<i>R</i>) <i>te</i> different , shaking/stirring ;	emperature has an effec	t				
	different , type of film/amount of protein on film ; different sized pieces of film ;		[2 max]				
2 same	same volume of enzyme ; same concentration of enzyme ; same volume of substrate ;						
	same concentration of substrate ; repeats ;						
7 ref. t	carry out , for stated range of/at (at least 3) different stated , temperatures ; ref. to maintaining pH/carry out at optimum pH ; ref. same , shaking/stirring/agitation , of tube ;						
			[Total: 20]				

	Page 3		}	Mark Scheme	Syllabus	Paper		
				IGCSE – October/November 2007	0610	05		
2	(a)	(i)) <i>drawing</i> ~ clear outline ; includes petiole ;					
			netw	vork of/branching/lateral , veins ; (R) p	(R) mid vein (R) parallel/veinlets (R) 'stalk' alone			
			lamiı	na/leaf blade;				
		(ii)	expect comparative statement unless it is clear that one surface <u>only</u> has th feature					
			veins more dark	per surface) s less prominent ; e shiny ; er colour ;				
				other/waxy ; er/no , stomata ;		[2 max]		
	(b)	(i)	total	(+ correct units) ;		[1]		
		(ii)	number of whole squares ;					
			atten	npt to include the part squares ;		[2 max]		
	(c)	(i)	bubbles on lower surface <u>and</u> , none/few , on upper surface ; (A) <u>more</u> bubbles on lower surface [1					
		(ii)	-	as , (trapped) in , leaf/intercellular spaces ; xpands ;				
			air e	scapes through stomata (on lower surface) ; e stomata on lower surface ;		[2 max]		
	(d)) (i) epidermal cell ; guard cell ;			[2]			
		(ii)	(at le	east 2) guard cells <u>only</u> circled;				
	(e)	1 2 3	prep	able use of microscope ; aration of epidermis on slide ; (A) n il ; e.g. cover with water & coverslip/use of stainin	ail varnish peel ng			
		4 5 6 7	dete calcu	nt the number of stomata in , field of view/given an rmine the area viewed in which stomata were cou ulate the area of leaf/ref. to calculation in (b) ; iply up for the whole leaf;		[4 max]		
			<i></i>			[]		

[Total: 20]