GCE Advanced Level

MARK SCHEME for the November 2004 question paper

9700 BIOLOGY

9700/05

Paper 5 (Practical Test A2), maximum raw mark 30

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. This shows the basis on which Examiners were initially instructed to award marks. It does 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*.

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

CIE is publishing the mark schemes for the November 2004 question papers for most IGCSE and GCE Advanced Level syllabuses.



Grade thresholds taken for Syllabus 9700 (Biology) in the November 2004 examination.

	maximum	minimum mark required for grade:			
	mark available	A	В	E	
Component 5	30	23	18	12	

The threshold (minimum mark) for B is set halfway between those for Grades A and C. The threshold (minimum mark) for D is set halfway between those for Grades C and E. The threshold (minimum mark) for G is set as many marks below the F threshold as the E threshold is above it.

Grade A* does not exist at the level of an individual component.



November 2004

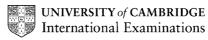
GCE A LEVEL

MARK SCHEME

MAXIMUM MARK: 30

SYLLABUS/COMPONENT: 9700/05

BIOLOGY Paper 5 (Practical Test A2)



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Mark Scheme A LEVEL – NOVEMBER 2004

SyllabusPaper97005

Qn	Expected Answers	Marks	Additional Guidance
1a i	 volume of amylase; volume of substrate; idea of mixing; drops of iodine on tile/test tube; (add drops of mixture) at set time; until no colour change; replication; other specific detail e.g. wash pipette etc; control qualified e.g. boiled enzyme /use water; 	max 7	use equal volumes = 1 mark accept put drops of sample on tile; add iodine solution to it;
ii bi ii	 boxes with data in e.g. time or colour; qualification of data e.g. time taken for starch to disappear; units in headings (secs); mean included; 0.81; axis correct orientation, units and scale correct; plots correct; straight line of best fit; 	1 1 1 1 1	 max 2 if do not use time ignore rate no significant figures points clearly lie close to a straight line, so a line of best fit is clearly the most appropriate way to plot the graph
iii c	reference to number/more enzyme <u>molecules;</u> reference to number/more active sites; reference to number of collisions; reference to why linear i.e. excess substrate/enzyme limiting; using water bath; for stable temperature/thermostatic/ fixed temperature given between 20 - 60 °C;	max 3 1	if candidate only refers to enzyme substrate complex allow 1 mark. <u>more enzyme substrate</u> complexes = 2
		20	

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2 a i different colour/lighter/less densely stained;		
 b nuclei represented in most cells; nuclei labelled; fine lines joined up with no gaps to show edge of one cell membrane; three (of five) cells touching; 	max 3 1 max 2 1 1 1 1 1 1	allow blood vessels in spaces Paper total 30