UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Advanced Level

MARK SCHEME for the June 2005 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.

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Grade thresholds for Syllabus 9700 (Biology) in the June 2005 examination.

	maximum mark available	minimum mark required for grade:		
		A	B	E
Component 5	30	24	22	16

The thresholds (minimum marks) for Grades C and D are normally set by dividing the mark range between the B and the E thresholds into three. For example, if the difference between the B and the E threshold is 24 marks, the C threshold is set 8 marks below the B threshold and the D threshold is set another 8 marks down. If dividing the interval by three results in a fraction of a mark, then the threshold is normally rounded down.

June 2005

GCE A LEVEL

MARK SCHEME

MAXIMUM MARK: 30

SYLLABUS/COMPONENT: 9700/05

BIOLOGY
Paper 5 (Practical Test A2)

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Question			Expected Answers	Marks	Additional Guidance
1	(a)		tubes 2 and 3 in headers; time in header; units shown in header; dark time > light time;	1 1 1 1	Accept tables showing cell results or showing only the time taken for reduction to occur.
	(b)		three from light causes chlorophyll to donate electron; DCPIP (absorbs electron and) is reduced; ref to NADP/reduced NADP; change only occurs in presence of light;	Max 3	ORA
	(c)		slow rate of reaction reduce enzyme activity; some qualification e.g. kinetic energy; ref to autolysis;	3 max	
	(d)		maintain constant pH;	1	OWTTE
	(e)		maintain suitable osmotic equilibrium;	1	OWTTE
	(f)		filter or centrifuge; solutions constant distance from lamp; better light control; constant temperature; use colorimeter; repeat experiment	3 max	
				15	
2	(a)		4.5:1; accept 9:2	2	1:4.5 or 2:9 = 1 mark
	(b)	(i)	too many red/too few white; no grid or accurate counting method;	1 1	
		(ii)	ratio of red to white much greater;	1	
	(c)	(i)-(iii)	eight from: correct cells drawn; proportions i.e. rbc smallest or same as lymphocyte and phagocyte largest; quality clear single lines; large lobed nucleus in phagocyte; granular cytoplasm in phagocyte; very large spherical nucleus in lymphocyte; two correct labels;	8	
		(iv)	between 7 and 11; μm;	1 1	
				15	
					Paper 30

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