

CAMBRIDGE
INTERNATIONAL EXAMINATIONS

June 2003

GCE A AND AS LEVEL

MARK SCHEME

MAXIMUM MARK: 25

SYLLABUS/COMPONENT: 9700/03

**BIOLOGY
Paper 3 (Practical 1)**



Page 1	Mark Scheme	Syllabus	Paper
	A/AS LEVEL EXAMINATIONS – JUNE 2003	9700	3

Question	Expected Answers	Mark	Additional Guidance	
1 (a) (i)-(iii)	T1 > T2;	1		
	T1 results have increased;	1		
	35-40 means correct;	1		
	45-50 means correct;	1		
	(b)	Allow the yeast to get to the correct temperature;	1	
	Allow the gas to expand and vent/contract and suck back;	1		
	(c)	Correct ref. to results e.g. T1 higher;	1	REJECT unqualified rates of reaction. If T1 lower then ecf, i.e. accept correct ref. to table and denaturation i.e. max 2
	Increased kinetic energy of molecules/move faster;	1		
	More collisions;	1		
	Rate of diffusion of glucose into yeast;	1		
	(d)	Two from: Explanation of control, i.e. yeast or no yeast/enzyme; eliminate effects of gas expansion due to temp fluctuations; Number of bubbles produced by T2 deducted from totals for T1;	Max 2	IGNORE for better comparison/control/fair test
	(e)	Three from: Not alternate counting; Keep at constant temperature; Take more readings; Control pH; Measure volume of gas;	Max 3	Allow reduce volume of reagents if qualified
			(15)	
	2 (a)	Clear single lines (quality);	1	
		3 arms to drawing;	1	
Nuclei drawn;		1		
Red blood cells smaller than nuclei;		1		
Wall of alveoli not more than 3 diameters of nuclei;		1		
3 correct labels from: air space/alveolus; nucleus; cytoplasm; cell membrane; red blood cells; epi/endothelium; alveolus wall;		3		
		Max 6		

Page 2	Mark Scheme	Syllabus	Paper
	A/AS LEVEL EXAMINATIONS – JUNE 2003	9700	2

- (b) 4 from:
Procedure explained;
Random sample;
Repeat 3 or more times;
Calculate means;
Ratio calculated between 1:4 and
1:20;

Max 4

(10)

Paper Total 25

