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CAMBRIDGE
INTERNATIONAL EXAMINATIONS

NOVEMBER 2002

GCE Advanced Level

MARK SCHEME

MAXIMUM MARK : 30

SYLLABUS/COMPONENT :9700 /5

BIOLOGY
(PRACTICAL)

UNIVERSITY of CAMBRIDGE
Local Examinations Syndicate

Qn	Expected Answers	Mark	Additional Guidance
1 a i	Nucleus – correct relative size (>1/2) Nucleus / nuclear membrane labelled Nucleolus labelled Cell wall -2 lines - labelled Chromatin One other correct label	 Max 4	Reject chromosomes If not interphase then max 3 Ignore cell membrane
1 a ii	Quality of drawing – it must be real Correct stages labelled Chromosomes / chromatids – correct labels – 1 mark each One other correct label	1 2 2 1	
1 a iii	Quality of drawing – it must be real Elongate Nucleus intact Vacuole labelled Small nucleus relative to cell (<1/4)	 Max 4	
		14	

2 a	S6 no change S7 bubbles / reaction S8 no change	1	Accept relative descriptions
2 b	S9 slower than S7	1	
2 c	S6 catalase denatured Explanation of denaturisation S7 has catalase S8 is control Explanation of control S9 dilution reduces rate of reaction Explanation of why dilution affects rate of reaction	Max 4	Allow denature mark if good explanation
2 d	Repeat and average Shoots of same mass / length / size Make it quantitative ie measure volume of oxygen Control temperature Same age / variety Control pH	Max 3	
2 e	Equalise pressure Acts as control	1 1	
2 f	Close tap and or screw clip Stabilise Note position of manometer fluid and start clock Note position of syringe Read position of fluid at fixed time Equalise levels with syringe Read off volume change in syringe Method to calculate rate	Max 3	
2 g	Remove KOH Replace with water Determine difference between O_2 and CO_2	Max 2	
		16	