

CAMBRIDGE
INTERNATIONAL EXAMINATIONS

June 2003

GCE A LEVEL

MARK SCHEME

MAXIMUM MARK: 30

SYLLABUS/COMPONENT: 9700/05

BIOLOGY
Paper 5 (Practical 2 (A2))



Page 1	Mark Scheme	Syllabus	Paper
	A/AS LEVEL EXAMINATIONS – JUNE 2003	9700	5

Question	Expected Answers	Marks	Additional Guidance
1 (a) (i)	F1 does not change/ ∞ ;	1	
	F2 changes quickest/F3 2 nd to change;	1	
	(ii) Blue;	1	
	(iii) F1 renal vein (plasma); F2 urine; F3 renal artery (plasma);	Max 2	ENSURE ecf from (a) (i) 3 = 2 2 = 1
	1 mark for each correct explanation, i.e. F1 urea removed by kidney; F2 high concentration of urea; F3 low concentration of urea;	1 1 1	
(b)	Two from: start all three at same time; replication; means of more precise pH measurement	Max 2	
		(10)	
2 (a)	2 cells only drawn; columnar; cells tapering; brush border drawn by single line; large nuclei almost cell width; 3 correct labels from brush border; nucleus; nuclear membrane; cell membrane; cytoplasm; max 1	Max 4	3 correct labels = 1 mark
	(b) Both circular/oval/angular/NOT columnar; circular nucleus; Nucleus proportionately smaller than (a); Clear unbroken lines; 3 correct labels from: nucleus; nuclear membrane; chondrocyte; lacuna; intercellular matrix; cytoplasm; cell membrane; max 1	Max 4	3 correct labels = 1 mark

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	A/AS LEVEL EXAMINATIONS – JUNE 2003	9700	5

- (c) Two from:
brush border: no brush border;
columnar: angular or circular;
nucleus oval: circular;
cells side by side: cells scattered;
no matrix: cells separated by matrix; Max 2

(10)

- 3 (a) Three from:
Ref to fan;
Ref to support;
Ref to under water;
Ref to acclimatisation;
Clip closed;
Capillary tube contains water;
Tight fit/no leaks; Max 3

- (b) Two from:
Light;
Temperature;
Humidity; Max 2

- (c) Three from:
Time measured;
Scale read;
Alter fan speed/change fan distance;
Replication;
Measure leaf area;
Ref to reset apparatus qualified;
Equilibrate if not given in (b); Max 3

- (d) $\pi r^2 h = 2$ marks;
Or length X; 1
Area of capillary; 1

(10)

Paper Total 30

