

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

General Certificate of Education O Level

MARK SCHEME for the June 2005 question paper

5090 BIOLOGY

5090/03

Paper 3 (Practical Test), maximum mark 40

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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.

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JUNE 2005

GCE O Level

MARK SCHEME

MAXIMUM MARK: 40

SYLLABUS/COMPONENT: 5090/03

BIOLOGY
Paper 3 (Practical Test)



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- 1 (a) (i) 200 - 280; mm; (or equivalent cm.) [2]
- (ii) image of that part of field of view for one blind spot;
falls on receptors of other eye;
blind spots do not coincide;
brain 'fills' the blank; A.W [up to 2]
- (b) (i) Drawing marks: [D.4]
- 1 At least 6 cm, clear and realistic
 - 2 Lids and lashes clear
 - 3 Iris and pupil accurately shown
 - 4 Vestigial eyelid shown on right
- Labels: (clearly correct)
cornea; iris; pupil; lid(s)/lashes; [up to 3]
- (ii) External size of iris same in both drawings;
pupil smaller in second drawing; [2]
- (iii) Pupil smaller in brighter light/after eye opens;
By contraction of circular muscles;
Of iris;
And relaxation of radials;
Limits entry of light;
Prevents dazzling;
OVP; [up to 6]
- [Total: 19]
- 2 (a) (i) To soften/kill cells/destroy enzymes; [1]
- (ii) To decolourise leaf/remove chlorophyll;
Enabling result of test to be seen; [2]
- (iii) Leaf goes soft/limp; [1]
- (iv) S1 and S2 spread on labelled tile;
iodine (solution) added; [2]
- (v) In table:
S1 turns (blue/)black, starch present;
S2 turns brown (etc.)/less black, no/less starch; [2]
- (vi) S2 contains no starch, turns brown;
because it requires CO₂ for photosynthesis/starch formation; [2]
- (b) (i) In range 32 - 34; [1]
- (ii) Graph marks: [5]
- 1 Rate of production on y axis
 - 2 Axes labelled correctly
 - 3 Scales correct
 - 4 Plots accurate and clear
 - 5 Line of best fit/ruled connections

Page 2	Mark Scheme	Syllabus	Paper
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- (c)** Draw the leaf to record green area;
Decolourise the leaf/remove chlorophyll;
Add iodine/carry out starch test;
Compare result with drawing;
Black area coincides with original green;
Showing chlorophyll necessary for photosynthesis;
White area acted as control;

[up to 5]

[Total: 21]

[Total for paper: 40]