UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the November 2004 question paper

0610 BIOLOGY
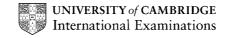
0610/05   Paper 5 (Practical), maximum mark 40

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It 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.

CIE is publishing the mark schemes for the November 2004 question papers for most IGCSE and GCE Advanced Level syllabuses.

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Grade thresholds taken for Syllabus 0610 (Biology) in the November 2004 examination.

	maximum mark available	minimum mark required for grade:			
		A	C	E	F
Component 5	40	33	28	22	18

The threshold (minimum mark) for B is set halfway between those for Grades A and C.
The threshold (minimum mark) for D is set halfway between those for Grades C and E.
The threshold (minimum mark) for G is set as many marks below the F threshold as the E threshold is above it.
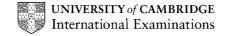Grade A* does not exist at the level of an individual component.

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK: 40

SYLLABUS/COMPONENT: 0610/05

BIOLOGY
(Practical)

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1 (a) (i) (exposed surface) dark <u>and</u> (unexposed surface) light in colour; **1**

(ii) *1 mark for <u>both</u> colours correct*

1 mark for <u>each</u> correct pH

	solution	
	A1	**B1**
colour	red/orange	blue/green;
pH	2 - 5;	8 - 10;

3

(iii) ruled lines <u>and</u> headings;

pale/no change/little change, in dish A;

dark in dish B; **3**

(iv) A1 is more acidic than B1;

enzyme (involved);

does not work/works slightly, in acid conditions;

produces coloured products/enzyme works, in alkaline solutions;

on exposure to air; **max 2**

(v) suitable method to exclude oxygen;

one test in air (for comparison);

control/fair test;

same surface area of tissue exposed;

suitable pH;

repeat; **max 5**

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(b) (i) *Allow ecf for conclusion following incorrect observation.*

test	W1	
	observation	conclusion
iodine solution	blue/black	starch present;
biuret reagents	stays blue/ no change/ does not turn purple	protein absent;

4

(ii) use/add, Benedict's reagent;

heat;

colour change to, green/yellow/red;   **3**

[Total 21]

2   (a) (i) Drawing - *[see supervisor's report]*

clear outline W2;

at least 10 cm in one direction;

shape *(showing at least 3 leaflets)*;

proportion;

detail of venation;

(detail) on a pair of leaflets;   **(6)**

Labels   - *any 4 from*

leaflet

lamina/leaf blade

midrib

vein

margin

petiole/leaf stalk

stipule

AVP;;;;   **(max 4)**

max 9

    (ii) dicotyledon;

    broad leaf/main midrib/network of veins/AW;   **2**

(b) (i) upper epidermis;

    lower epidermis;

    palisade (layer);

    spongy (layer);

    both and only palisade and spongy stated to contain chloroplasts
                     or labelled as mesophyll;   **max 4**

    (ii) <u>air</u> space/stoma/guard cell;   **1**

    (ii) *Correct measurement must be seen to gain 3 marks.*
          No units, max 2. Units must be seen at least once for 3.
          Correct answer with no working = 2 ticks = 2 marks.
          ecf for possible 2 marks if measurement incorrect, using his measurement.

    thickness [95 -106 mm/9.5 - 10.6 cm];

    ÷ by 200;

    correct answer [0.475 - 0.53 mm/0.0475 - 0.053 cm];   **max 3**

                                          [Total 19]