UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2006 question paper

0610 BIOLOGY

0610/06 Paper 6, maximum raw mark 40

These mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. They show the basis on which Examiners were initially instructed to award marks. They do 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*.

The minimum marks in these components needed for various grades were previously published with these mark schemes, but are now instead included in the Report on the Examination for this session.

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1 (a) (i) Drawing of pod:
S larger size than Fig.1.2, ;
P accurate proportion;
O clear outline;

Label: pod (fruit);
nut (seed);
stalk (flowering); **[max: 5]**

(ii) length of drawing …… mm / cm
and length of Fig.1.2 … mm / cm;
magnification x……..; **[3]**

(b) (i) rise in temperature 50˚C **[1]**

(ii) 50 x 20 x 4.2 / 0.5 x 1000 ;
8 or 8.4 kJ g^{-1} ; **[2]**

(iii) graph B bar chart;
A axes labelled and units;
C columns – ruled + gaps between columns;
P plot completely accurate; **[4]**

(vi) fat; ecf. **[1]**

(c) grind in water;
add Benedicts solution(s);
heat;
colour change; **[max: 3]**

[total: 19]

2 (a) (i) shoot tip curved upwards towards light;
leaves expanded;
stem wider and longer;
credit use of figures; **[max: 2]**

(ii) root bending downwards into soil/sand;
side roots developing;
roots longer and wider;
larger surface area with side roots;
credit use of figures; **[max: 2]**

(b) 1 phototropism;
2 geotropism;
3 positive or negative (in context);
4 growth;
5 mitosis;
6 leaf / cell enlargement;
7 differentiation into xylem or phloem;
8 photosynthesis;
9 respiration;
10 auxins;
11 AVP; **[max: 6]**

[total: 10]

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3 (a) (i)

	total	**average**
dark and dry	**24**	**6**
light and dry	**4**	**1**

2 totals and 2 averages correct;;
[dark and moist total 204 – average 51 – already calculated] **[2]**

(ii) working and completion of pie chart
4 sections;
proportions correct;
labels/ key;

	average	**sectors**
dark and dry	6	2
dark and moist	51	17
light and dry	1	1/3rd
light and moist	2	2/3rd

[3]

(b) (i) largest number in dark and moist sector; **[1]**

(ii) largest number in damp conditions;
to stop drying out and/or to be less conspicuous;
hide under cover for survival;
not exposed to sun and dry out;
AVP; **[max: 2]**

(c) fresh sample so first time / no previous experience/AW;
different chambers – no scent;
more woodlice;
equilibrate apparatus between trials;
monitor temperature / one named variable;
level bench / turn or rotate chamber; **[max: 3]**

[total: 11]

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