UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2007 question paper

0610 BIOLOGY

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

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International Examinations

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	IGCSE – May/June 2007	0610	05

1 (a) (i) ***table design***
column/row, with heading for length ;
rows / columns, with headings for S1 and S2 ; [2]

(ii) ***filling in their table***
measurement for 5 x S1 specimens entered into table ;
measurement for 5 x S2 specimens entered into table ;
Accept reasonable measurements. Zero for S1 = 0
units (in headings/main body of table [***at least once in S1 and S2***]) ; [3]

(iii) ***to complete Table 1.1***
Allow ecf. Allow correct rounding.
Reject mean calculated from only 1 measurement.
means calculated (***whole number or 1dp***) ; ; [2]

(b) (i) ***Allow ecf if their measurements are reversed (i.e. if S1 > S2)***

1 germination/development, in S2 in warm ;
2 ref. root development/AW ;
3 leaf/shoot, development/AW ;
4 testa detached/testa split/cotyledons visible/AW ;

5 no/little, development/germination, (of seeds) in S1 in cold ;
6 root/shoot, not extended outside testa/AW ;

7 use of data for comparison ;
8 enzyme activity faster/optimum enzyme temperature, in warm/AW ;
9 detail ; e.g. enzyme link to metabolism
detail of enzyme action
ref. food store [5 max]

(ii) ***Max 2 if temperature kept the same for both groups (i.e. no difference between them)***
same, type/species, of seed ;
same size of dish ;
same volume of water ; (***A***) ***soak for the same time***
keep, in dark/covered with foil/equal light conditions ;
same amount of oxygen ;
(grow for) same period of time ;
same number of seeds ; [3 max]

(c) (i) biuret ; [1]

(ii) ***to complete Table 1.2*** [***see supervisor's report***]
S1 purple/lilac ;
S3 paler/lighter, purple/lilac ; (***A***) ***blue/green/yellow/no change*** [2]

(iii) ***to follow on from Table 1.2, allow ecf***
S1 has more protein/S3 has less protein ; [1]

[Total: 19]

2 (a) (i) ***drawing ~*** clear outline ;
proportions ; **(*at least 5 cm, with pointed end and blunt end*)**

labels ~ anterior end/mouth/head ; **(*at pointed end*)**
segment ;
(cuticle/outer covering/'skin') colour ; [4 max]

(ii) **(*R*) *use larger specimens***
observe living specimen ;
remove from tube/remove lid/use thinner glass tube/AW ;
good light source ;
hold with, a pin/forceps/AW ;
observe with a microscope ; **(*R*) *magnifying glass***
AVP ; e.g. if moving, make sure that they are dead [2 max]

(iii)

S4	S5	
pale colour	darker colour	;
not/less, shiny	shiny	;
shape described	broader shape	;
segments	segments not visible	;
larger	smaller	;
AVP	AVP	;

[2 max]

(b) (i) insect/arthropod ; [1]

(ii) egg ; [1]

(iii) 6/3 pairs, of legs ;
3 parts to body/head + thorax + abdomen ;
compound eyes ;
1 pair of antennae ;
2/1 pair, of wings ;
jointed limbs ;
exoskeleton ; [3 max]

(c) (i) A axes labelled + units ; **(*temp. °C time days*)**
S orientation [temp on *x* axis] + scale increments equal ;
P plot [of data for S5 to adult only] ; ; ***1 error = 1, 2 errors = 0***
L clear unbroken line [not beyond plot points] ; **(*join dots / best fit*)** [5]

(ii) 1 development quicker at higher temperatures ;
2 figs. [for same part of life cycle at different temp] ;
3 ref. metabolism/enzyme activity/AW ;
4 ref. respiration ;

5 S5 to adult , quicker/takes less time, than S4 to S5 ;
6 large difference at low temp/little difference at high temp ; [3 max]

[Total: 21]