UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2008 question paper

0610 BIOLOGY

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

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1 (a) ***(A)*** *temperatures with .5 but* ***(R)*** *temperatures with other decimal places (e.g. .7)*

(i) temperature recorded for both 'dry' and 'wet' at 'zero' time **;** [1]

(ii) 5 more temperatures recorded for 'dry' **;**
5 more temperatures recorded for 'wet' **;**

no increase in temperature shown in 'dry' series **;**
no increase in temperature shown in 'wet' series **;**

'wet' temperature decreases more over the range than 'dry' **;** [5]

(b) A axes correctly orientated, each with labels and units **;**
x-axis time in minutes ***(R)*** *m, y-axis temperature in °C*

S even scale, with zero, to fill over half of the printed grid **;**

L ruled line joining point to point / line of best fit **;**
(R) *line beyond 10 minutes* ***(R)*** *'fuzzy' line*

K key / label **,** to identify lines **;**

P all 12 values from candidate's Table 1.1 plotted correctly **;**
+/– 1mm or half a square plots must be visible [5]

(c) (i) 'wet' loses **,** more heat / heat more quickly **;**
(A) *temperature / energy* ***(A)*** *converse*
use of figures / ref to gradients **;**
'figures' = 2 sets of figures / difference , for both 'wet' and 'dry' [2]

(ii) 1 dry cover is insulator **;**
(A) *converse*

2 traps air / air is a poor conductor of heat **;**
(A) *traps heat* ***(A)*** *converse*

3 water evaporates from (wet) paper **;**

4 ref latent heat of evaporation / (evaporation) cools the water (in container) /
takes heat from water / takes heat from container /
takes energy from water / takes energy from container **;**
(A) *'cools container'* [3 max]

(iii) sweating / sweat **;**

(water / sweat) evaporates **;**

energy supplied by / removes heat from , skin **;** [2 max]

(d) (i) *credit any two ways*
ignore start at same time / take temperature at same time / add water at same time / 'about'

containers same size ;
containers made of same material ;
containers same shape ;

same / equal , volume / amount / level , of (hot) water in each container ;
both containers , have lid / covered ;

same amount of paper ;
same type of paper ;

wet paper not allowed to dry ;

same time duration ;

same starting temperature ;
same surrounding temperature ; [2 max]

(ii) *credit any three improvements relating to accuracy and reliability only*
ignore extend time / different amounts of insulation / different types of insulation / different wetting methods any other way in which the investigation could be extended

prevent draughts ;

repeat ;

more frequent readings ;

have 2 thermometers ;
suspend thermometers at same position ;
same starting temperature ;
use digital thermometer(s) ;

use measuring cylinder to measure volume of water ;

use better fitting lid ;

AVP ; e.g. lid / paper , to be the same colour in both (ref. radiation) [3 max]

[Total: 23]

2 **(a)** *drawing*
clear continuous outline with no shading ; ***(R)*** *3-D*

good proportions and at least 5 cm in one direction ;

at least 1 seed attached to the placenta ;

labels
seeds / placenta ;

ovary wall / fruit wall / pericarp ;

point of attachment (scar) / remains of calyx / remains of sepals ;

remains of , style / stigma ; [5 max]

(b) **(i)**

(type of fruit)	true / described	false / described	;
(size)	small	large	;
(seeds)	many	few / one	;
	small	large	;
	round / circular	oval / elliptical	;
	white / yellow	brown	;
	soft / jelly , seed coat / testa	hard , seed coat / testa	;
	not central / towards edge	central	;
(shape)	correct ref to difference in fruit shape		;
	thin flesh layer	thick flesh layer	;
	large (fleshy) middle	small central region	;
(texture)	soft , fruit / centre / flesh	hard(er) / tough , fruit / flesh	;
	juicy / watery	dry	;
(colour)	correct ref to difference in skin colour		;
	red flesh	yellow / green , flesh	;
	skin and flesh same colour	skin and flesh not same colour	;
(attachment)	remains of calyx large (if present)	remains of calyx , small / opposite end	;

[4 max]

(ii) *credit any two similarities*
ignore dispersal / fruit / wall

suitable statements might refer to
shape / colour / texture / presence of seeds / both have receptacles /
both have skin / 2 chambers / 2 sets of scars / AVP ; ; [2 max]

(c) 1 equal sample **,** size / mass **;**

2 equal <u>volume</u> of water **;**

3 crush fruit / cut fruit into small pieces **;**

4 <u>equal volume</u> of Benedict's reagent **;**

5 heating <u>in hot</u> (not warm) <u>water</u> bath **;** ***(A)*** *80°C or above*

6 <u>equal</u> time of heating **;**

7 <u>comparison</u> of colours **;** (4 max)

credit 2 refs to safety

S safety glasses **;**

S hot water **;**

S Benedict's **;**

S knife **;**

S flame / bunsen **;**

S hot glassware **;** ***(R)*** *if in context of heating directly* (2 max) [6]

[Total: 17]