

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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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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- 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]

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- (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]

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- 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	;
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(size)	small	large	;
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(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	remains of calyx ,	;
	(if present)	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]

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- (c) 1 equal sample , size / mass ;
2 equal volume of water ;
3 crush fruit / cut fruit into small pieces ;
4 equal volume of Benedict's reagent ;
5 heating in hot (not warm) water bath ; **(A)** 80°C or above
6 equal time of heating ;
7 comparison 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]