



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE
NAME

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--	--

* 7 4 5 5 8 3 5 8 4 2 *

BIOLOGY

0610/06

Paper 6 Alternative to Practical

May/June 2008

1 hour

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a pencil for any diagrams or graphs.

Do not use staples, paper clips, highlighters, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

For Examiner's Use	
1	
2	
3	
Total	

This document consists of **9** printed pages and **3** blank pages.



- 1 Humans and other mammals are able to maintain a relatively constant body temperature, despite widely ranging environmental temperatures. Mammals, unless adapted to living in water, seem to prefer not to get wet.

Three flasks were set up as shown in Fig. 1.1. Each flask represents a hot mammal cooling down.

Flask **A** had nothing around the flask. This represents a hairless mammal.

Flask **B** had a dry covering of cotton wool around the flask. This represents a mammal with dry fur.

Flask **C** had a wet covering of cotton wool soaked in water around the flask. This represents a mammal with wet fur.

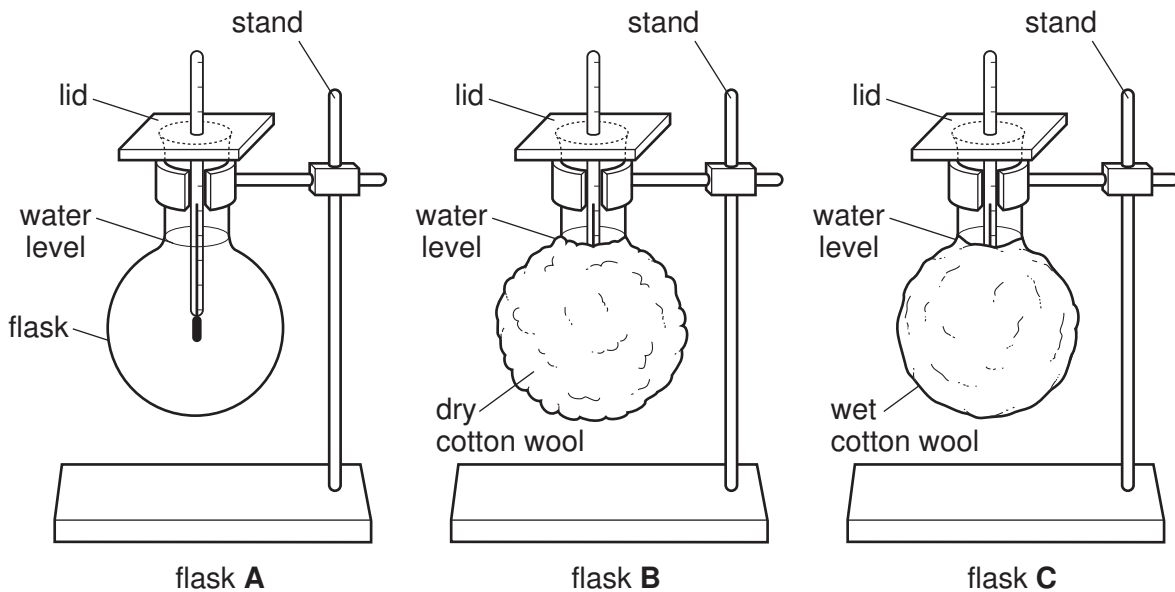


Fig. 1.1

Each flask was covered with a lid through which a thermometer was suspended. The bulb of the thermometer was immersed in the water, but did not touch the sides of the flask. Each flask was filled with an equal volume of hot water.

The temperature of the water in each flask was measured as it cooled.

Readings were taken every 2 minutes and recorded in Table 1.1.

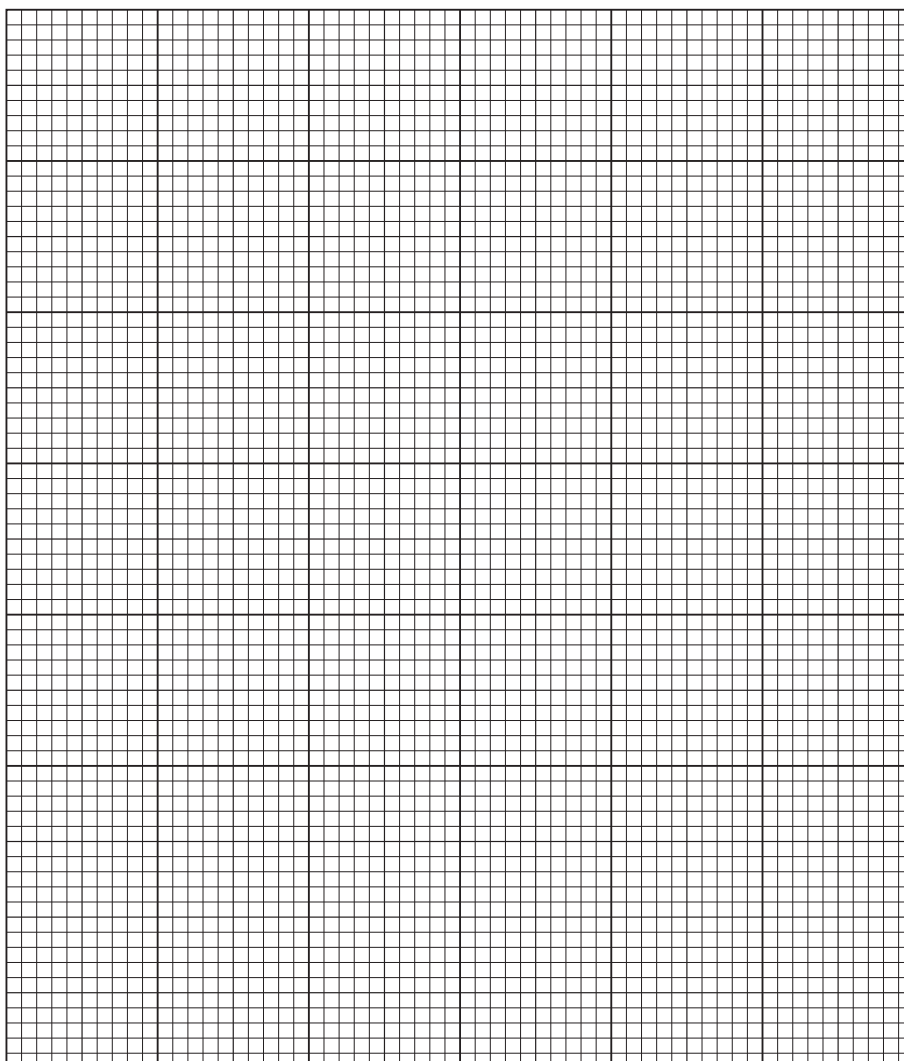
A laboratory clock was used to check the time.

Table 1.1

For
Examiner's
Use

temperature / °C			
time / min	flask A	flask B	flask C
0	70	70	70
2	66	68	64
4	61	67	58
6	58	65	52
8	50	61	42
10	45	60	40

(a) (i) On the same axes plot a graph of the three sets of results.



[5]

(ii) Compare cooling of the water in the three flasks.

flask **A** compared with flask **B**.

.....
.....

flask **B** compared with flask **C**.

.....
.....

flask **C** compared with flask **A**.

.....
..... [3]

(iii) Explain what has happened to produce these results.

.....
.....
.....
..... [3]

(b) (i) Describe **three** ways in which this investigation was a fair test.

.....
.....
.....
.....
.....
..... [3]

(ii) Describe **two** improvements which would increase the accuracy and reliability of this investigation.

.....
.....
.....
..... [2]

[Total: 16]

*For
Examiner's
Use*

2 Fig. 2.1 shows a tomato and Fig. 2.2 shows an apple, both are cut in half longitudinally through the middle.

*For
Examiner's
Use*

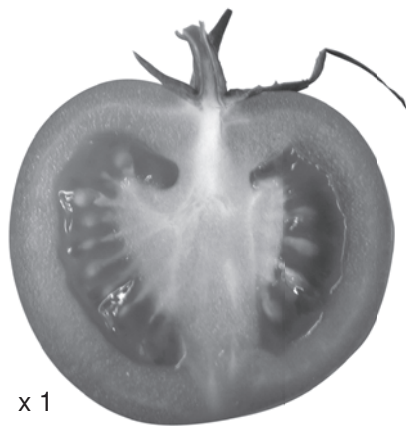


Fig. 2.1

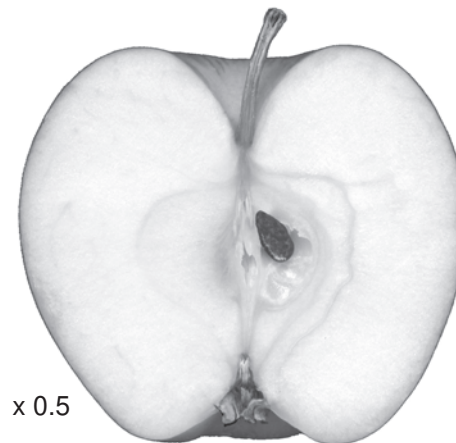


Fig. 2.2

(a) Make a large, labelled drawing of the cut surface of the tomato fruit shown in Fig. 2.1.

[5]

- 3 Pollen grains start to germinate when they land on a suitable stigma and produce a pollen tube. Fig. 3.1 shows a single carpel from a flower with a germinating pollen grain.

For
Examiner's
Use

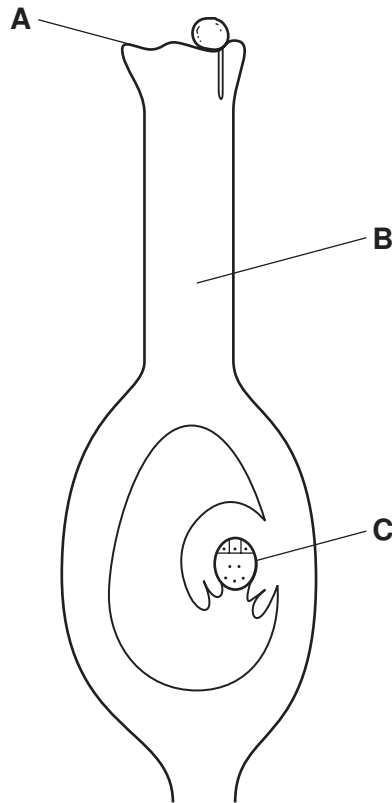


Fig. 3.1

- (a) (i) Identify the structures labelled **A**, **B** and **C**.

A

B

C [3]

- (ii) Draw a line on Fig. 3.1 to continue the path taken by the pollen tube until it enters structure **C**.

[1]

- (b) (i) Measure the diameter of the pollen grain shown in Fig. 3.1 and the approximate distance the pollen tube grows to reach and enter structure **C**.

Diameter of pollen grain mm

Distance grown mm

[1]

- (ii) How many times greater is the distance grown by the pollen tube than the diameter of the pollen grain?

..... times greater

[2]

[Total: 7]

*For
Examiner's
Use*

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

University of Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.