UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE
NAME

CENTRE
NUMBER

CANDIDATE
NUMBER

BIOLOGY **0610/62**

Paper 6 Alternative to Practical **October/November 2010**

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 **10** printed pages and **2** blank pages.

UNIVERSITY *of* CAMBRIDGE
International Examinations

[Turn over

1 Apples grow, are picked and stored. Changes occur in the apples during their develop

Fig. 1.1 shows three apples at different stages.

Fig. 1.1

(a) Describe the visible changes, other than the size of the apple, that you observe in appearance of these apples, as shown in Fig. 1.1.

....

....

....

.... [3]

Chemical changes occur in apples during storage.

(b) Describe how you could safely test for changes in starch and reducing sugar.

....

....

....

....

....

....

....

....

....

.... [5]
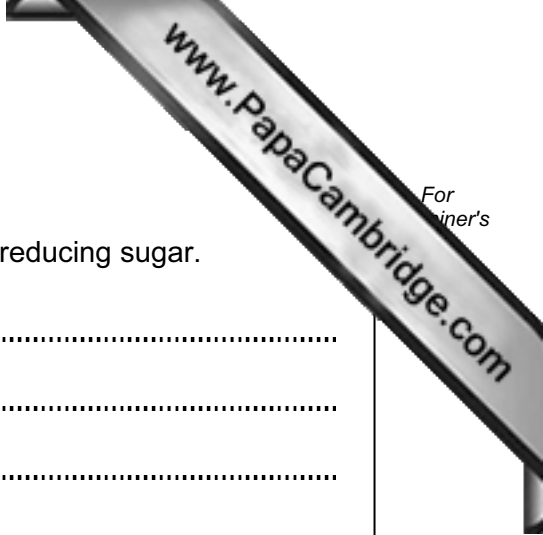
In a different investigation, some apples were stored for 10 days. The apples were w
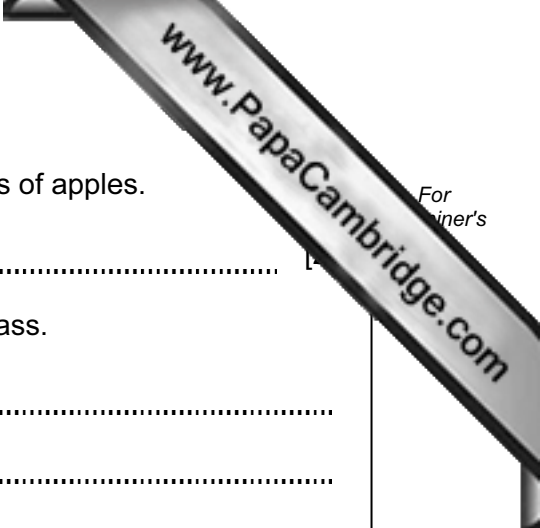at intervals and the results recorded in Table 1.1.

Table 1.1

time / days	mass of apples / g	total loss in mass / g
0	730.0	0
2	719.9	10.1
4	694.5	35.5
6	663.7	
8	636.5	
10	620.5	

(c) (i) Complete Table 1.1, by calculating the total loss in mass of apples stored for 6, 8 and 10 days. [1]

(ii) Plot the total loss in mass of apples against time.

[4]

For
iner's
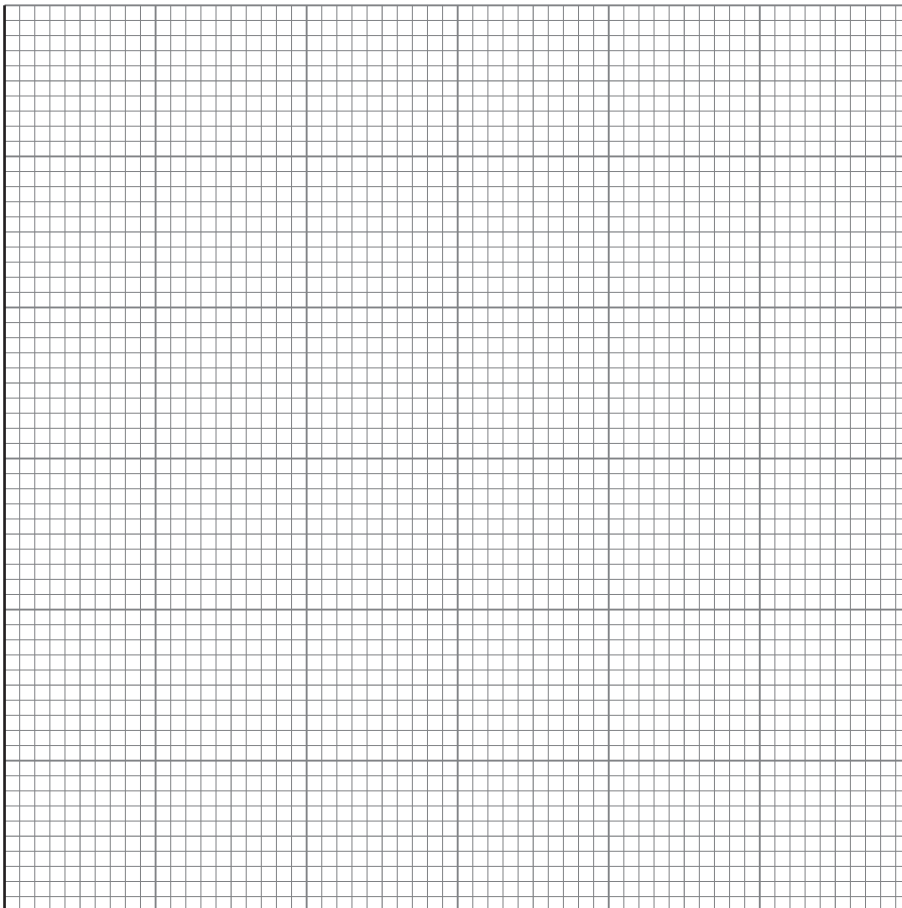
(iii) Suggest **two** processes that would cause the loss in mass of apples.

....

(iv) Suggest how apples might be stored to prevent loss of mass.

....

....

....

....

....

....

.... [3]

[Total : 18]

2 Fig. 2.1 shows the shell of an animal that lives in water. The shell consists of two par

Fig. 2.1

(a) Make a large, labelled drawing of this shell.

[4]

(b) Suggest and explain **one** way in which the shell is an adaptation to the habitat ...
animal.

....

....

....

.... [2]

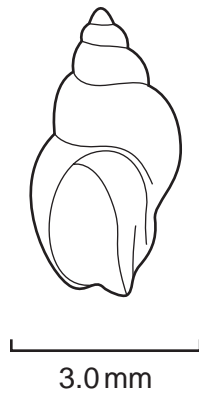Fig. 2.2 shows the shell of a different animal belonging to the same group.

3.0 mm

Fig. 2.2

(c) (i) The animals that have the shell shown in Fig. 2.1 and that shown in Fig. 2.2 belong
to the same group. Name this group.

.... [1]

(ii) Calculate the actual length of the shell shown in Fig. 2.2.

Show your working.

Write the answer to the nearest 0.1 mm.

Answer .... mm [3]

[Total : 10]

3 Some species of water plants live in freshwater and have two types of leaf.

In these species, some leaves float on the surface of the water and other leaves a.....
submerged.

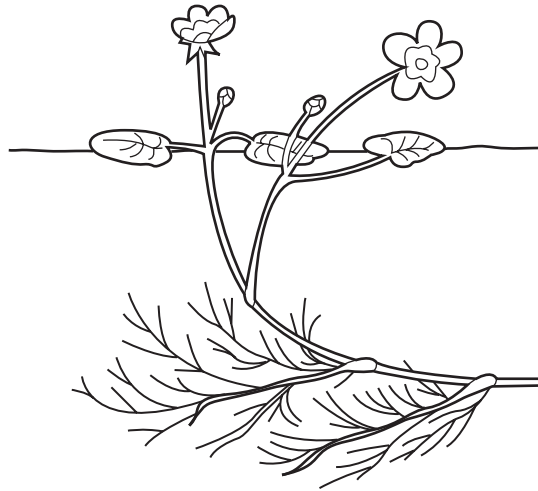Fig. 3.1 shows a water plant with floating and submerged leaves.

Fig. 3.1

(a) Describe how the submerged leaves are different in appearance from the floating leaves.

....

....

....

.... [2]

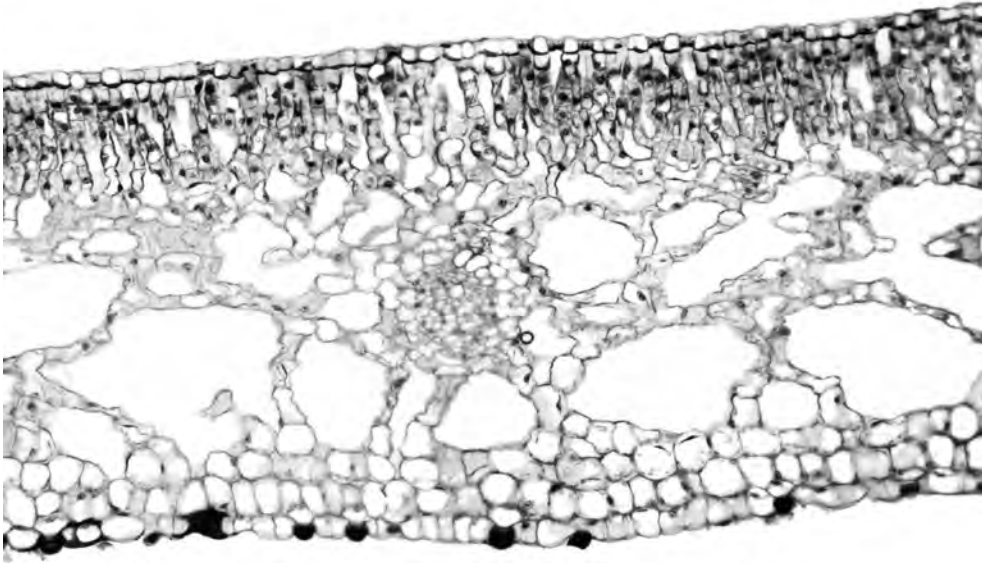**(b)** Fig. 3.2 shows a section through a floating leaf.

Fig. 3.2

(i) On Fig. 3.2 label the palisade and spongy mesophyll.

Use label lines and the words 'palisade mesophyll' and 'spongy mesophyll' on Fig. 3.2. [2]

(ii) Describe how the **mesophyll tissues** shown in Fig. 3.2 make the functioning of the floating leaf effective.

....

....

....

....

.... [3]

Hydrogencarbonate indicator solution is red.

The indicator changes colour when the pH changes.

In acid conditions it goes yellow.

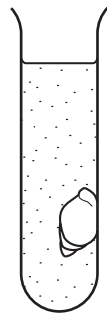In alkaline conditions it goes purple.

Two test-tubes containing hydrogencarbonate indicator solution were set up.
One test-tube contains a small animal.
The other test-tube contains a piece of water plant.
Both tubes were kept in the light for 2 hours.

Fig. 3.3 shows the appearance of the two test-tubes after 2 hours.

animal in
test-tube

plant in
test-tube

Fig. 3.3

(c) State the colour in each test-tube and explain the change from red.

colour of indicator in the test-tube that contains an animal ....

explanation ....

....

....

colour of indicator in the test-tube that contains a plant ....

explanation ....

....

....

.... [5]

[Total: 12]

BLANK PAGE

BLANK PAGE