



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

CANDIDATE  
NAME

CENTRE  
NUMBER

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CANDIDATE  
NUMBER

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**Biology**

**0610/53**

Paper 5 Practical Test

**October/November 2010**

**1 hour 15 minutes**

Candidates answer on the Question Paper

Additional Materials: As listed in Instructions to Supervisors

**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 medium (HB) pencil for any diagrams or graphs.

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

DO **NOT** WRITE IN ANY BARCODES.

Answer **both** 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	
<b>1</b>	
<b>2</b>	
<b>Total</b>	

This document consists of **8** printed pages.



1 Three similar pieces of apple labelled **W1**, **W2** and **W3** have been stored for different lengths of time.

(a) (i) In Table 1.1, describe the appearance and the texture of each piece of apple.

**Table 1.1**

	<b>W1</b>	<b>W2</b>	<b>W3</b>
appearance			
texture			

[3]

(ii) Suggest which piece of apple, **W1**, **W2** or **W3**, has been stored for the longest time. Explain your choice.

.....  
 ..... [1]

Chemical changes occur in apples during storage.

(b) (i) Describe how you could safely test the pieces of apple for starch and reducing sugar.

.....  
 .....  
 .....  
 .....  
 .....  
 ..... [4]

(ii) Carry out these tests safely on samples of **W1**, **W2** and **W3**.

If you require hot water, raise your hand and it will be brought to you.

Record your observations in Table 1.2.

**Table 1.2**

test	observations		
	<b>W1</b>	<b>W2</b>	<b>W3</b>
starch			
reducing sugar			

[5]

(iii) What can you deduce about the effect of storage time on the starch and reducing sugar content of the pieces of apple, **W1**, **W2** and **W3**?

.....

.....

.....

.....

.....

.....

.....

[3]

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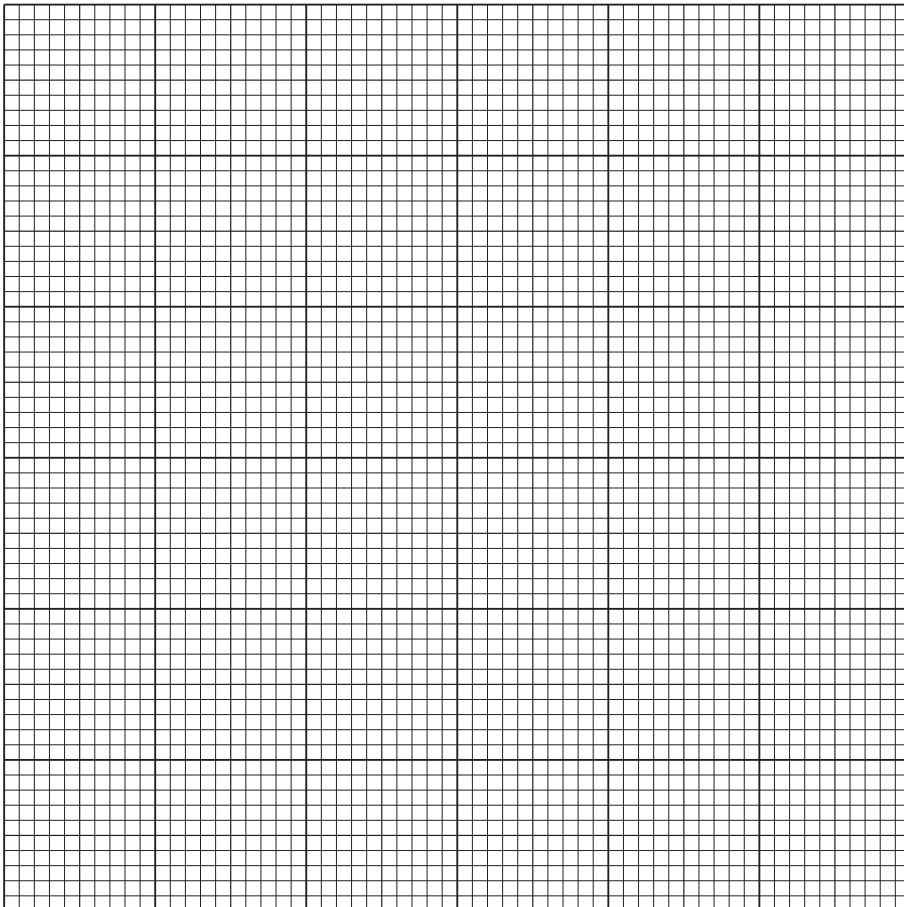
In a different investigation, some apples were stored for 10 days. The apples were weighed at intervals and the results recorded in Table 1.3.

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**Table 1.3**

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 1.3, 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]

(iii) Suggest **one** process that would cause the loss in mass of apples.

..... [1]

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

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

[Total: 25]

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2 **W4** is the shell of an animal that lives in water. The shell consists of two parts.

(a) Make a large, labelled drawing of **W4** to show the external features of both parts of the shell.

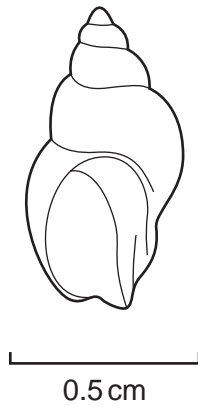
[4]

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

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

Fig. 2.1 shows the shell of a different animal belonging to the same group.

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**Fig. 2.1**

- (c) (i) The animals that have the shell **W4** and the shell shown in Fig. 2.1 belong to the same group. Name this group.

..... [1]

- (ii) Calculate the actual length of the shell shown in Fig. 2.1.

Show your working.

**Write the answer to the nearest 0.1 mm.**

Answer .....mm [3]

**Question 2 continues on page 8**

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, labelled **A**, contained a small animal.

The other test-tube, labelled **P**, contained a piece of water plant.

Both tubes were kept in the light for two hours.

The animal and the piece of water plant were then removed.

**(d)** Describe the colour in each test-tube and explain the change from red.

colour of indicator in test-tube **A** (contained an animal) .....

explanation, .....

.....

.....

colour of indicator in test-tube **P** (contained a plant) .....

explanation. ....

.....

.....

..... [5]

[Total: 15]