

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

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CANDIDATE NAME					
CENTRE NUMBER			CANDIDATE NUMBER		

Biology 0610/51

Paper 5 Practical Test

October/November 2012

1 hour 15 minutes

Candidates answer on the Question Paper

Additional Materials: As listed in the Confidential Instructions

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 both questions.

Electronic calculators may be used.

You may lose marks if you do not show your working or if you do not use appropriate units.

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								
Total								

This document consists of 10 printed pages and 2 blank pages.



1 Read through all the questions on this paper carefully before starting work.

You are going to compare the metabolism of two yeast mixtures in test-tubes W1 and W2.

Both mixtures contain the same concentration of sucrose.

www.papaCambridge.com (a) Set up and use the apparatus provided, as shown in Fig. 1.1, to obtain the results needed to complete Table 1.1.

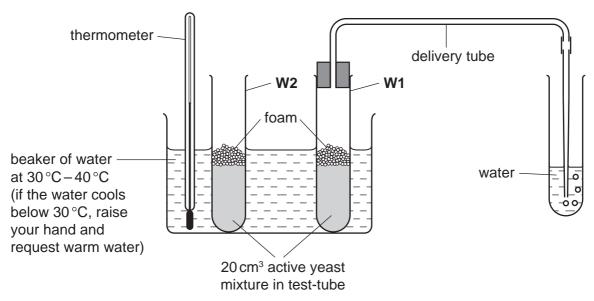


Fig. 1.1

- Connect the bung and delivery tube to test-tube **W1**, as shown in Fig. 1.1.
- Wait for two minutes before placing the open end of the delivery tube in the water, as shown in Fig. 1.1.
- Note the time and immediately start counting the number of gas bubbles. After two minutes, record the number of bubbles as trial 1 in Table 1.1.
- Repeat the counting process for two minutes and record this number of bubbles as trial 2 in Table 1.1.
- Repeat the counting process for two minutes and record this number of bubbles as trial 3 in Table 1.1.
- Remove the bung and delivery tube from test-tube **W1**.
- Connect the bung and delivery tube to test-tube W2 and repeat the above procedures.

Table 1.1

yeast mixture	number of bu	bbles of gas released ir	n two minutes
yeast mixture	trial 1	trial 2	trial 3
W1			
W2			

		3
(b)	Gas	s bubbles are produced in this experiment. State which metabolic process is being carried out by the yeast cells to produce.
	(i)	State which metabolic process is being carried out by the yeast cells to producthis gas.
		[1]
	(ii)	Name this gas. [1]
	(iii)	Describe a test for this gas and the result that you would expect.
		[2]
(c)		gest why the test-tubes W1 and W2 were placed in a beaker of warm water during experiment.
		[2]
(d)		scribe and explain any differences observed in the number of bubbles of gas eased.

......

......

.....

[3]

(e)	State two sources of error in the method of this investigation. Suggest how to it the method to reduce each source of error.
	source of error
	improvement
	source of error
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	[4]

[Total: 17]

- 2 You are provided with two leaves, **W3** and **W4**.
 - (a) Make a large, labelled drawing of leaf W3.

ANNA BARBICAN For viner's viner's

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	6	1
Us	e the hand lens to carefully observe leaf W3 and leaf W4 .	Can
	e the hand lens to carefully observe leaf W3 and leaf W4 . scribe one similarity and two differences that you can see. Do not include size or comparison. similarity	13
(i)	similarity	
		[1]
(ii)	differences	
	1	
	2	
		[2]
(iii)	Leaf W3 is from a dicotyledon.	
	Give one visible feature to support this statement.	
		[1]

Fig. 2.1 shows a photomicrograph of a section of a leaf similar to W3.

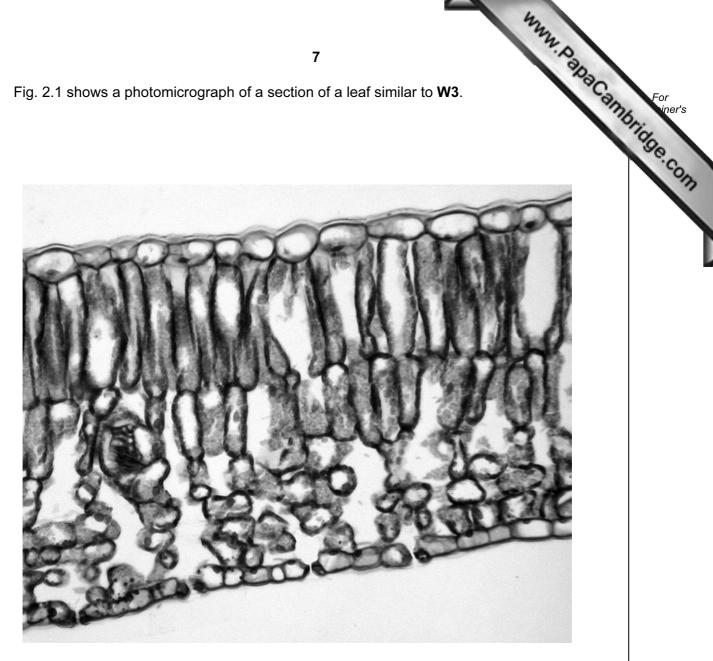


Fig. 2.1

- (c) (i) On Fig. 2.1, draw a line to label a photosynthetic cell in the palisade layer. [1]
 - (ii) Draw arrows on Fig. 2.1 to show the pathway that carbon dioxide gas must take to reach the photosynthetic cell labelled in (c)(i) from the air outside the leaf. [2]

When leaves die, they fall from the tree and are eventually decomposed.

www.PapaCambridge.com Some students investigated the decomposition of samples of leaves. They made drawing and weighed the samples at intervals over a period of two years.

Table 2.1 shows the results of this investigation.

Table 2.1

time / months	mass of leaves in sample / g	appearance of one leaf in the sample
0	42.5	
6	46.0	
12	32.5	
18	16.0	***************************************
24	7.5	

(d)	(i)	Describe and eyears.	explain the	changes ir	appearance	of the	leaves	during	the two
									[0]

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[4] (iii) Describe the results for the change in mass shown on the graph.

iv)	Suggest two factors that may change the rate of decomposition of the leave
	1
	2
	[2]
	[Total: 23]

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