

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

	CANDIDATE NAME			
	CENTRE NUMBER		CANDIDATE NUMBER	
*	BIOLOGY			0610/61
<u> </u>				
۲ ۹	Paper 6 Alterna	tive to Practical		May/June 2013
6				1 hour
ы Ш		when on the Owentien Dense		
⁴ 5	Candidates ans	wer on the Question Paper.		
5 1 2	No Additional M	laterials 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.

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

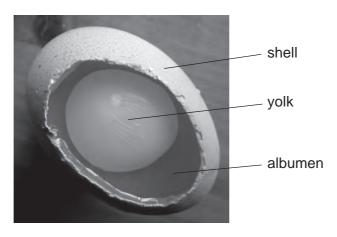
At the end of the examination, fasten all your work securely together. The number of marks is given in brackets [] at the end of each question or part question.

This document consists of 11 printed pages and 1 blank page.



For Examiner's Use

1 Fig. 1.1 shows a bird's egg. Part of the shell has been removed.





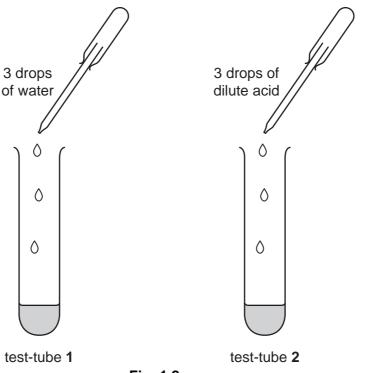
Approximately 90% of albumen is water. The remaining 10% is made up of other substances such as reducing sugar.

(a) Describe how you could safely test a sample of albumen for reducing sugar.

(b) A student tested some albumen for the presence of protein using Biuret reagent. The solution changed colour. It was a positive result. Describe this colour change.

For Examiner's Use

(c) Fig. 1.2 shows an experiment to investigate the effect of acid on albumen.





The test-tubes were observed after five minutes. The results are shown in Table 1.1.

Tabl	e ′	1.'	1
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test-tube	observation
1	stayed as a clear liquid
2	changed from a clear liquid to a white solid

(i) State a conclusion that can be made from these results.

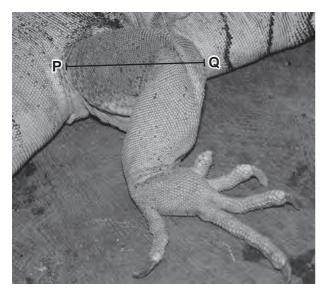
(ii) State why water was added to test-tube 1. [1]

(d)	Fat is present in the yolk. A student carried out the emulsion test on a sample of yolk and it gave a positive result. State what the student would observe.	For Examiner's Use
	[1]	
(e)	Two students wanted to investigate the effect of concentration of acid on albumen.	
	For this investigation, suggest a suitable:	
	variable to change;	
	variable to measure or observe;	
	variable to control. [3]	
	[Total: 11]	

For Examiner's Use

2 Fig. 2.1 shows the back leg of two animals.

The animals belong to two different vertebrate groups.





animal A

animal **B**

Fig. 2.1

(a) (i) Describe **one similarity**, **visible** in Fig. 2.1, between the leg of animal **A** and the leg of animal **B**.

[1]

(ii) Complete Table 2.1 to state **two differences**, **visible** in Fig. 2.1 between the leg of animal **A** and the leg of animal **B**.

	Table	2.1
--	-------	-----

feature	animal A	animal B

[3]

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(b) Make a large, labelled drawing of the leg of animal **A**.

[5]

(c) You are going to calculate the magnification of your drawing of the photograph of the leg of animal **A**.

Length of line **PQ** in Fig. 2.1 is 36 mm. Draw line **PQ** on your drawing in the same position as in Fig. 2.1.

Length of line PQ in drawing _____mm

Calculate the magnification of your drawing. Show your working.

magnification × [3]

(d) A population of animals was studied over nine years. The changes in the population of For males are shown in Fig. 2.2 Examiner's Use 700 600 500 estimated 400 number of males 300 200 100 0 1996 1992 1994 1998 2000 2002 year Fig. 2.2 (i) Use the graph to estimate the total population of males and females in 1992. Assume that the number of males and females is equal. Show your working. total population of males and females [1] (ii) Describe the changes in the population from 1992 to 2001. [3] [Total: 16]

7

For

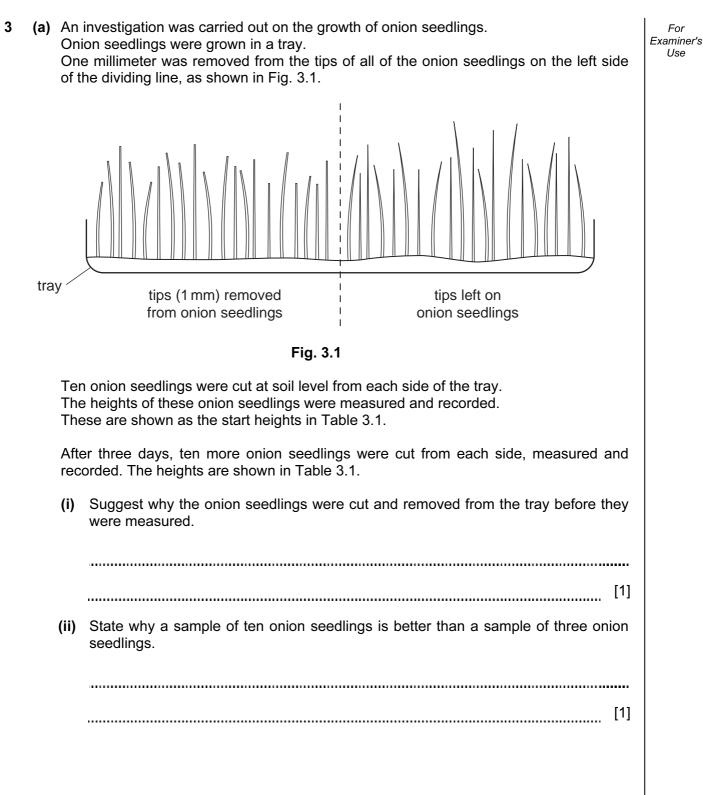


Table 3.1 shows the heights of the onion seedlings at the start and of those measured after three days.

For Examiner's Use

		height of se	edling/mm								
	tino ro		tips left on								
	ups re	moved	ups i								
	start	after three days	start	after three days							
	84	70	70	63							
	61	76	79	65							
	54	63	57	83							
	57	76	58	79							
	56	80	53	83							
	62	71	52	74							
	68	73	61	76							
	45	60	63	60							
	64	76	51	85							
	49	75	76	62							
total height/mm	600		620								
mean height/mm	60		62								

Table 3.1

(iii) Complete Table 3.1 by calculating the total height **and** mean height of the onion seedlings after three days. [2]

(iv) Calculate the mean increase in height of the onion seedlings:

tips removed	mm	
tips left on	mm	

[1]

For

Examiner's Use

(b) The experiment was repeated with another tray of onion seedlings. The same experiment was then performed on beetroot seedlings. The results are shown in Table 3.2.

mean increase in height / mm													
onion se	eedlings	beetroot seedlings											
tips removed	tips left on	tips removed	tips left on										
10	9	1	7										

Table 3.2

(i) Draw a bar chart on Fig. 3.2 to show the data in Table 3.2.

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Fig. 3.2

[4]

(ii)	Describe the effect of removing the tips on the growth of onion and beetroot seedlings.	For Examiner's Use
	onion	
	beetroot	
	[2]	
(iii)	Suggest where growth takes place in the shoots of onion and beetroot seedlings.	
	onion	
	beetroot	
	[2]	
	[Total: 13]	

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Copyright Acknowledgements:

Question 2 Figure 2.1

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