



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

Paper 6 Alternativ	o to Practical	May/June 2							
BIOLOGY			0610/61						
CENTRE NUMBER		CANDIDATE NUMBER							
CANDIDATE NAME									

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 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 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.

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1							
2							
3							
Total							



1 hour

1 Fig. 1.1 shows sections though blood vessels, **X**, **Y** and **Z**.



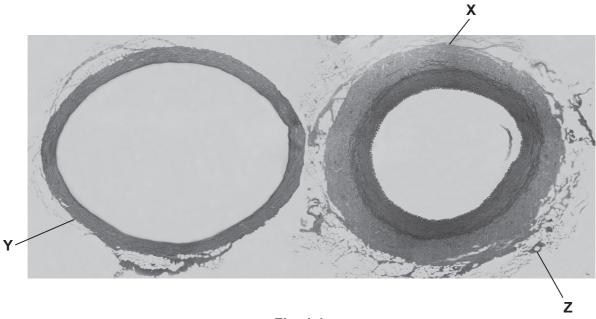


Fig. 1.1

(a) (i) Draw a labelled diagram to show the structures of X.

[5]

(ii)	Name the type of blood vessel labelled X .
	[1]
(iii)	Compare the blood vessels shown in Fig. 1.1 to explain how you reached your identification for (a)(ii).
	IZI

A 5 mm length of a blood vessel of the same type as $\bf X$ was used to investigate how far it could be stretched using a number of 10 g weights.

The apparatus used is shown in Fig. 1.2.

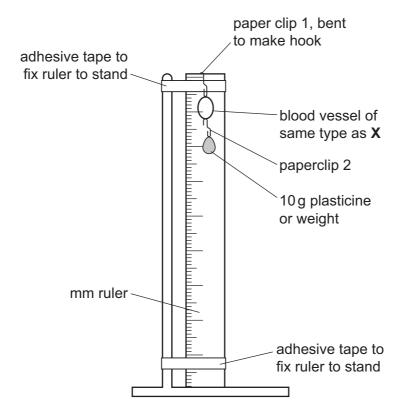


Fig. 1.2

For Examiner's Use As weights were added, the internal diameter of the blood vessel increased as shown in Table 1.1.

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Table 1.1

mass of weights / g	internal diameter / mm	increase in diameter / mm
0	20	0
10	25	5
20	29	9
30	32	12
40	33	13
50	34	
60	35	
70	36	
80	37	
90	37	
100	38	

(b) (i) Complete Table 1.1 by calculating the increase in diameter of the blood vessel.

Write your answers in the spaces on Table 1.1.

Show your working in the space below.

[1]

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2 The sweet potato, *Ipomoea batatus*, is a different species to the Irish potato, *Solanum tuberosum*.

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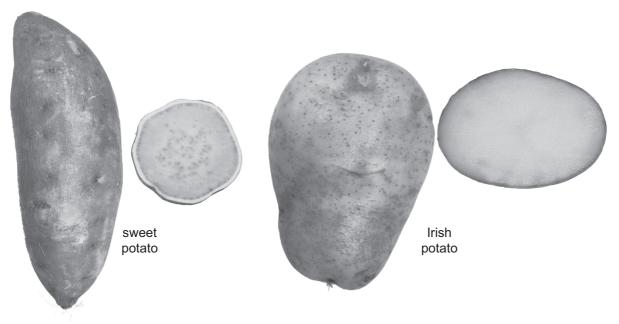


Fig. 2.1

(a)	(i)	Describe one similarity, visible in Fig.2.1, between the two species of potato.	
			••••
			[1]

(ii) Complete Table 2.1 to show two differences, visible in Fig 2.1, between the two species of potato.

Table 2.1

	sweet potato	Irish potato
difference 1		
difference 2		

[2]

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[Total: 11]

(b)	Potato crops are grown for their carbohydrate content.
	Describe how you could safely test the two species of potato to compare their carbohydrate content.
	test for starch
	test for reducing sugar
	[8]

3 Tomato seeds of the same type and maturity were left to germinate in different solutions at 20°C.

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In dish A, 20 seeds were left in water.

In dish **B**, 20 seeds were left in juice from a ripe tomato. The pH of the juice measured pH 6.

In dish **C**, 10 seeds were left in a solution which was at pH 6. There was no tomato juice in this solution.

Fig. 3.1 shows the seeds after 5 days. Some of the seeds have germinated and short radicles have developed.

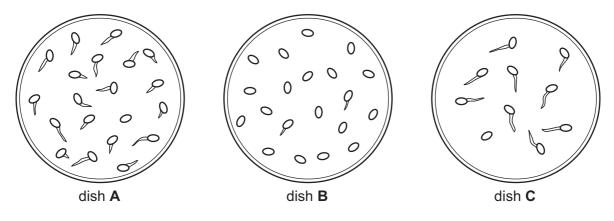


Fig. 3.1

(a) (i) Record the number of seeds that have germinated in each dish in Table 3.1.

Table 3.1

num	ber of seeds germinating	
dish A	dish B	dish C

[2]

(ii) Calculate the percentage increase in the number of seeds that have germinated in dish C compared with dish B, if the same number of seeds had been left to germinate in dish C.

Show your working.

.....% % [2]

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	(iii)	Suggest a reason why a larger percentage of seeds have germinated in dish C compared with dish B even though both solutions were at pH 6.
		[2]
	(iv)	Explain the purpose of dish A in this investigation.
		[1]
(b)	Des	sign an experiment to find out the effect of pH on seed germination.

	******	[6]
	•••••	[Total: 13]

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