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| Centre Number | Candidate Number | Name |
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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education  
Advanced Subsidiary Level and Advanced Level

**BIOLOGY****9700/03**

Paper 3 Practical Test AS

May/June 2006

**1 hour 15 minutes**

Candidates answer on the Question Paper.

Additional Materials: As listed in the 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 pencil for any diagrams, graphs or rough working.

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

Answer **all** questions.

You are advised to spend 40 minutes on Question 1 and 35 minutes on Question 2.

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 6 printed pages and 2 blank pages.



- 1 You are required to carry out an investigation into the relative quantities of reducing sugar in potato and onion tissue.  
You are provided with test-tubes, labelled **X**, **Y** and **Z**, each containing a different concentration of reducing sugar. You are also provided with some potato tissue, labelled **P**, and some onion tissue, labelled **O**.

(a) Carry out the test for reducing sugars on samples **X**, **Y** and **Z**.

- (i) Describe, giving full practical details, how you carried out the test for reducing sugars.

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

- (ii) Record your observations in Table 1.1.

- (iii) Complete the column headed **conclusion**.

**Retain the test-tubes for comparison with the results you obtain in (b)(ii).**

**Table 1.1**

| solution | observation    | conclusion     |
|----------|----------------|----------------|
| <b>X</b> | .....<br>..... | .....<br>..... |
| <b>Y</b> | .....<br>..... | .....<br>..... |
| <b>Z</b> | .....<br>..... | .....<br>..... |

[3]

- (iv) Determine the order of concentration of reducing sugar in the three solutions and complete Table 1.2.

**Table 1.2**

| concentration | X or Y or Z |
|---------------|-------------|
| high          |             |
| medium        |             |
| low           |             |

[1]

- (b) Finely cut up tissue **P** on the tile and place the crushed tissue into one of the two empty test-tubes provided.

Add 2 cm<sup>3</sup> of water to the test-tube.

Place a bung in the open end of the test-tube and shake gently.

Repeat the process for tissue **O** using the other empty test-tube.

- (i) Carry out the test for reducing sugars on both samples.

Record your observations in Table 1.3.

**Table 1.3**

| tissue sample | observation    |
|---------------|----------------|
| <b>P</b>      | .....<br>..... |
| <b>O</b>      | .....<br>..... |

[2]

- (ii) Compare your observations with the results obtained for part (a).

.....

.....

.....

.....

..... [2]

(c) Explain how you made sure that your tests produced a fair comparison.

.....

.....

.....

.....

.....

.....[3]

[Total : 13]

2 S1 is a slide of a stained transverse section of an artery.

(a) (i) Make a large, labelled, plan diagram to show the distribution of the tissues.

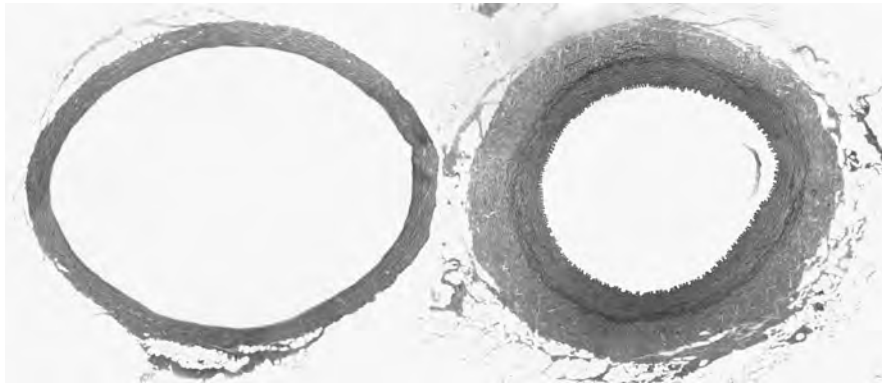
(ii) Calculate the magnification of your drawing.  
Show your working.

[4]

magnification .....

[2]

(b) Fig. 2.1 is a photomicrograph of an artery and a vein.



**Fig. 2.1**

Describe **three visible** differences between the artery and the vein.  
Explain the reason for each structural difference.

difference 1 .....

explanation

.....  
.....

difference 2 .....

explanation

.....  
.....

difference 3 .....

explanation

.....  
.....

[6]

[Total : 12]

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