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Centre Number	Candidate Number	Name

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education
Advanced Subsidiary Level and Advanced Level

BIOLOGY **9700/03**

Paper 3 Practical Test AS

October/November 2006

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 in the spaces provided on the Question Paper.
You may use a pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **both** questions.
The number of marks is given in brackets [ ] at the end of each question or part question.
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.

For Examiner's Use	
1	
2	
Total	

This document consists of **6** printed pages and **2** blank pages.

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Answer **both** questions.

If you have been provided with a microscope, you are advised to begin with question **1**. If you will not receive a microscope until half way through the examination, you are advised to begin with question **2**, and to move on to question **1(d)** if necessary.

1 You are provided with a fresh leaf, labelled **K1**, taken from a dicotyledonous plant and a bottle of clear varnish, labelled **K2**.

Use the brush provided to apply a single coat of varnish, approximately 1 cm^2, to both surfaces of the leaf.
Place the leaf out of the way and allow the varnish to dry.

You are also provided with three leaves, labelled **K3**, **K4** and **K5**, that were taken from the plant three days ago.
Leaf **K3** has been coated on both surfaces with petroleum jelly.
Leaf **K4** has been coated on the lower surface only with petroleum jelly.
Leaf **K5** has been coated on the upper surface only with petroleum jelly.

(a) Compare the condition of each leaf with **K1**.

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.....[3]

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(b) Return to leaf **K1**.
Carefully peel off the varnish from the lower surface of the leaf.
Mount the varnish in a drop of water on a microscope slide, cover with a coverslip and view through your microscope to see an imprint of the cells.
Repeat this process with another microscope slide, with the varnish from the upper surface of the leaf.

Make a large, labelled, high-power drawing of representative samples of cell types that you can see on the lower and upper surfaces.
Use the same scale for all drawings.

large, labelled, high-power drawing of representative sample of no more than five cells from the lower surface

large, labelled, high-power drawing of representative sample of no more than five cells from the upper surface

[6]

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[Turn over

(c) Use your two sets of drawings to explain the condition of leaves **K3**, **K4** and **K5**.

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.....[3]

(d) Describe how you would investigate the effect of wind speed on the rate of transpiration in similar leaves.

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.....[5]

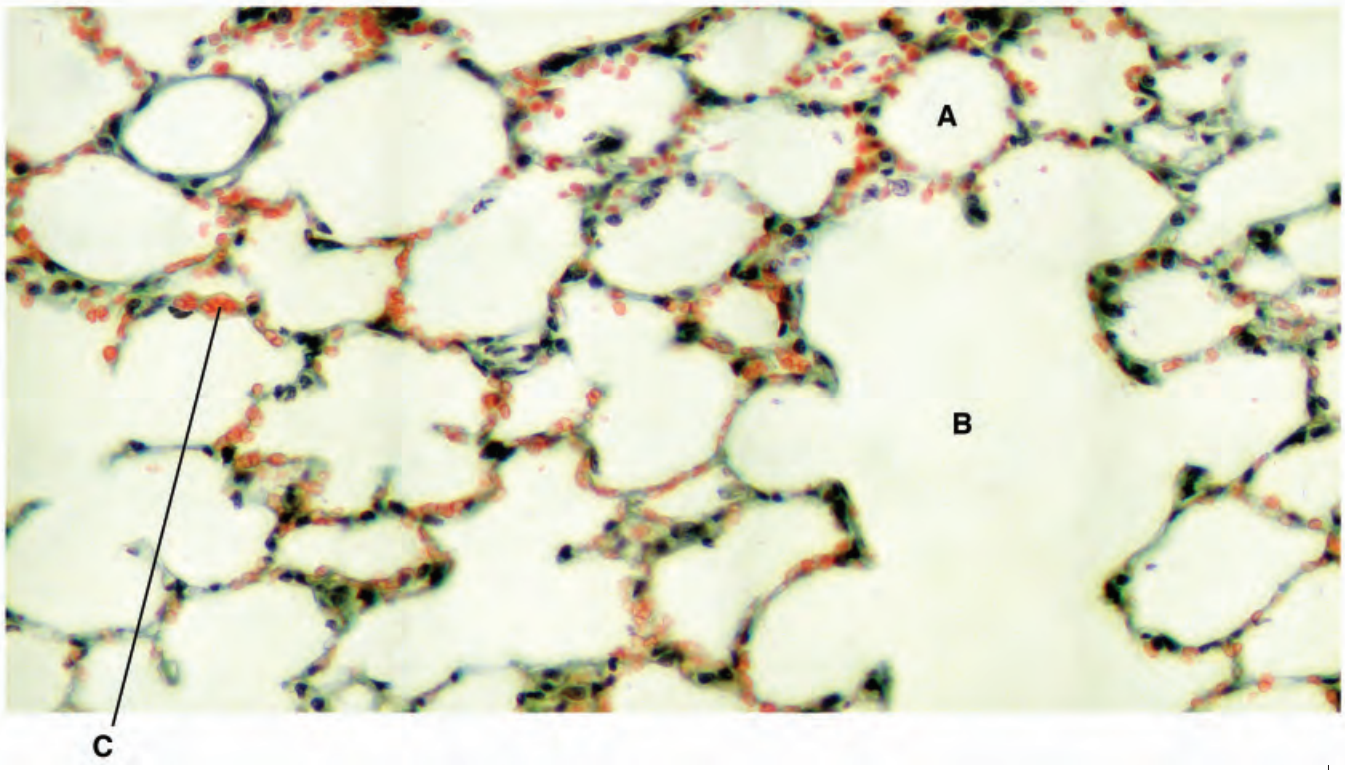
[Total: 17]

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Question 2 is on page 6

2 Fig. 2.1 is a photomicrograph of a section through lung tissue.



× 220

Fig. 2.1

(a) Calculate the actual diameter of the alveolus labelled **A**.
Show your working.

.....[2]

(b) Suggest why the alveoli shown in the photomicrograph appear to be of different sizes.

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.....[2]

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(c) State **two** pieces of evidence that suggest that structure **B** is a terminal bronchiole.

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.....[2]

(d) State **two** pieces of evidence that indicate that structure **C** is a capillary.

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.....[2]

[Total: 8]

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