

CANDIDATE
NAME

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CENTRE
NUMBER

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CANDIDATE
NUMBER

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BIOLOGY**5090/32**

Paper 3 Practical Test

October/November 2015**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 an HB pencil for any diagrams or graphs.

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

DO NOT WRITE IN ANY BARCODES.Answer **all** questions.

Write your answers in the spaces provided.

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	
3	
Total	

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

In order to plan the best use of your time, read through all the questions on this paper carefully before starting work.

1 You are going to investigate the effect of fruit juice on potato. Fruit juice contains a lot of sugar.

You are provided with four solutions of fruit juice, **A**, **B**, **D** and **E**. Each solution contains fruit juice in the quantities shown in Table 1.1.

Pieces of potato tissue were cut from fresh potatoes to measure 60mm × 10mm × 3mm and placed in each of these solutions.

(a) Complete Table 1.1 to include the volumes of concentrated fruit juice and water that you will need to prepare 100cm³ of solution **C**.

Table 1.1

solution	volume of fruit juice /cm ³	volume of water /cm ³	percentage fruit juice in solution
A	0	100	0
B	25	75	25
C			50
D	75	25	75
E	100	0	100

[1]

- Prepare 100cm³ of solution **C** in container **C**.

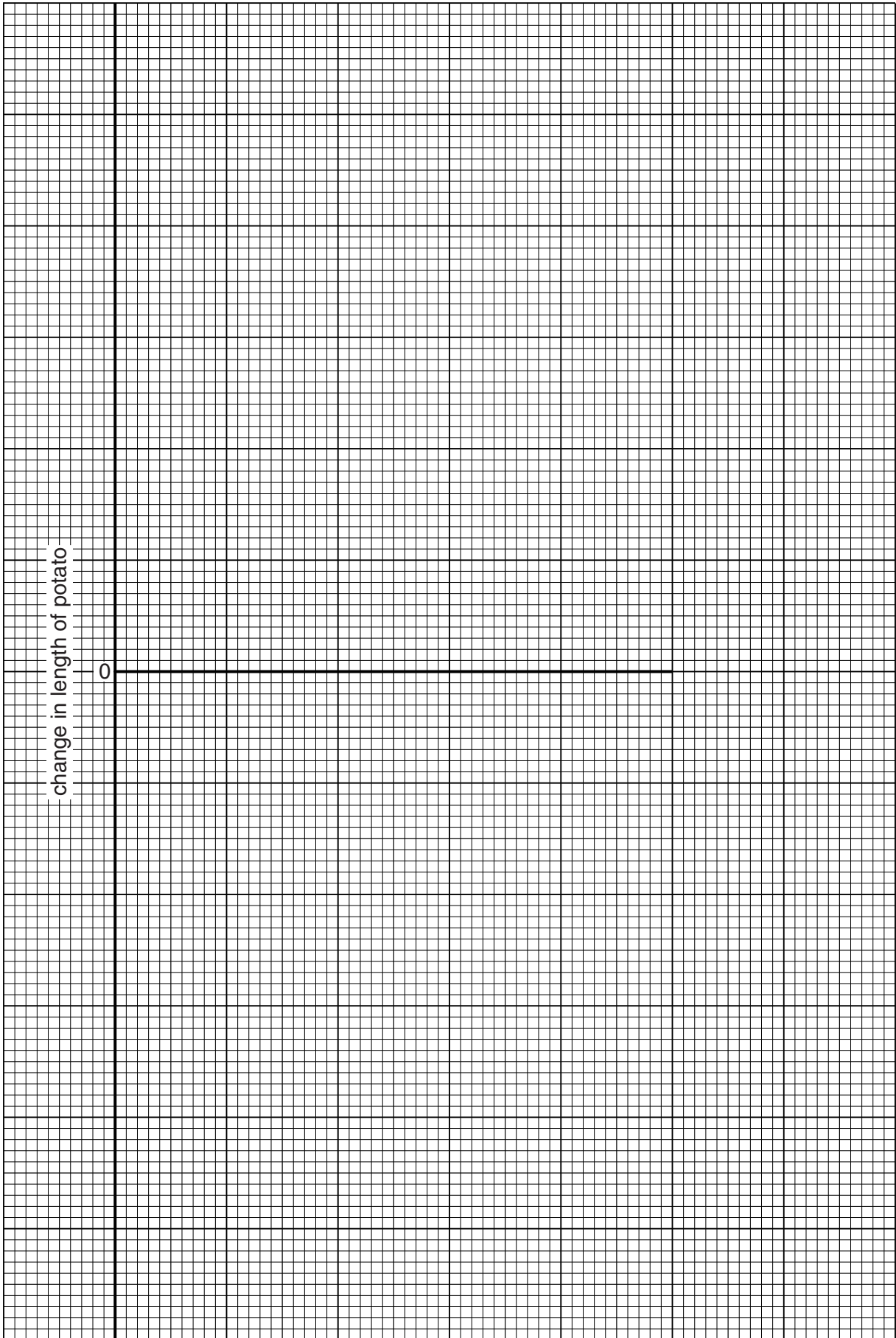
You have been provided with a piece of fresh potato covered by plastic film.

- Remove the plastic film and place the piece of potato on the white tile.
- Use the sharp knife provided to cut a strip of potato tissue measuring 60mm × 10mm × 3mm.
- Add this piece to solution **C** and leave for 20 minutes.

Record the time that the piece was added to the solution.

.....

Question 1 continues on page 4



(c) Suggest **three** improvements you could make to the method used to improve the reliability of this investigation.

1.....

.....

2.....

.....

3.....

.....[3]

[Total: 19]

- 2 Fig. 2.1 shows a variegated leaf. Variegated leaves have green (dark) and white (pale) areas.

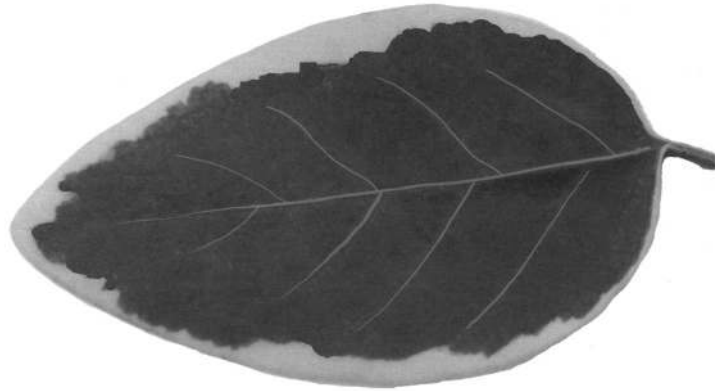


Fig. 2.1 magnification $\times 0.5$

- (a) (i) Make a large labelled drawing of this leaf.

[4]

(ii) The leaf you have drawn had been exposed to light.

Describe how you could test the leaf safely to show that its green areas contained starch.

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.....[4]

(iii) Describe what the green and white areas of the leaf would look like at the end of your test.

green areas

white areas[2]

Fig. 2.2 shows the lower surface of a similar leaf as seen with a microscope.

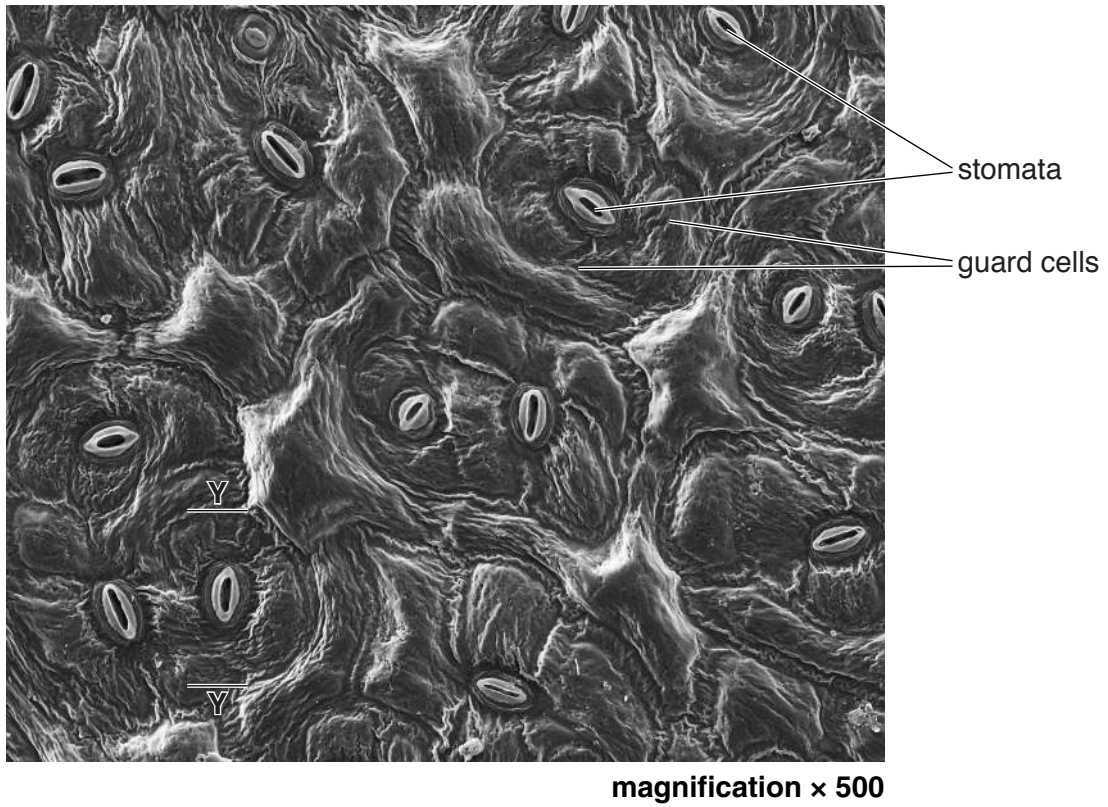


Fig. 2.2

(b) (i) Count the number of stomata present in Fig. 2.2.

.....

[1]

(ii) Measure the distance between **Y – Y** as shown on Fig. 2.2.

Length of **Y – Y** – the length of one guard cell

Calculate the actual length of this guard cell.

actual length =[3]

[Total: 14]

3 Fig. 3.1 shows two sections of lung tissue as seen with a microscope.

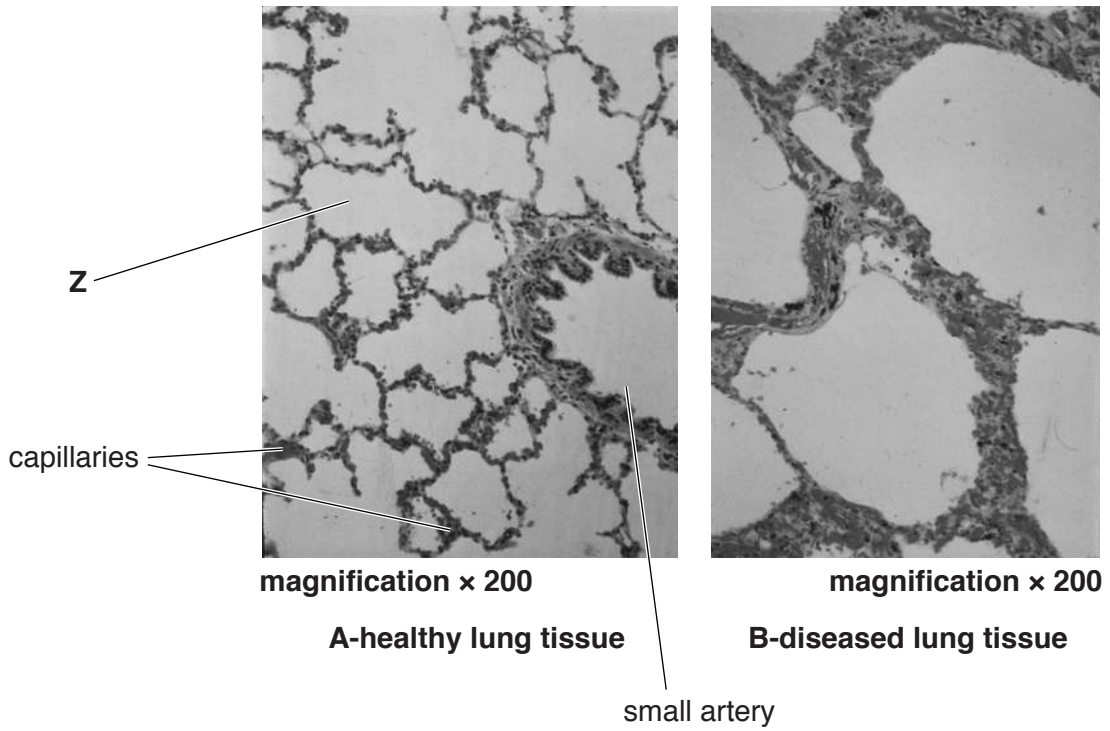


Fig. 3.1

(a) (i) In Fig. 3.1 A a small artery is labelled.

State the visible features of this blood vessel that show it is an artery.

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

(ii) Name the structure labelled Z in Fig. 3.1 A.

..... [1]

(b) (i) Explain, using features visible in Fig. 3.1 **A**, how the healthy lung tissue is adapted for gas exchange.

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.....[3]

(ii) Describe **one** visible difference between the diseased and healthy lung tissue shown in Fig. 3.1.

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.....[1]

[Total: 7]

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