UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

7027033156

BIOLOGY **5090/32**

Paper 3 Practical Test **October/November 2011**

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 a pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **both** 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.

For Examiner's Use	
1	
2	
Total	

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

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[Turn over

You are advised to read the whole of the question paper before starting the practical work.

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1 You are provided with a piece of celery, which is the leaf stalk of a plant, and with a slice of potato tuber.

- Remove a thin slice of approximately 2 mm from one end of the celery and discard it.
- Cut off a piece of the celery 4 cm long.
- Stand this on its end on the white tile.
- Cut a piece of the potato to the same length.
- Stand this on its end on the tile.
- Using a dropper, carefully cover the cut surface at the top of each specimen with iodine solution, being careful not to allow any of the solution to run down the side.
- Leave for 15 minutes.

Begin question 2 while you are waiting.

- Wash both specimens under a tap to remove excess iodine solution.

(a) Using the hand lens provided, carefully observe the end of the celery to which the iodine solution was applied.

(i) Make a large, labelled drawing of this end to show the details of the structures that you can see and the effect of the iodine solution.

[5]

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(ii) Calculate the magnification of your drawing in **(a)(i)**. Rule a line across your drawing to show where you measured. Show your working clearly.

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magnification ..... [4]

(b) Cut the piece of celery vertically into three pieces, down through the stained tissue.

Cut the potato vertically into three pieces.

Observe the specimens with the hand lens.

(i) Describe, with the help of a diagram, where the iodine solution stained the piece of celery.

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..... [3]

(ii) State **two** ways in which the stained pieces of celery and potato differ.

1. .....

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2. .....

..... [2]

(c) Describe and explain the differences in the structure of celery and potato as shown by the iodine solution.

For Examiner's Use

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..... [6]

[Total: 20]

2 Food materials may contain fats and proteins.

For Examiner's Use

(a) Describe, with practical details, how you would demonstrate that a food specimen does, or does not, contain

(i) fats

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..... [4]

(ii) proteins

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..... [4]

(b) Carry out these tests on specimens **W1** and **W2** and complete Table 2.1.

Table 2.1

	fats		proteins	
	W1	**W2**	**W1**	**W2**
observation				
conclusion				

[6]

(c) Outline, but do not carry out, an investigation to show that one food material releases more energy than another.

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..... [6]

[Total: 20]

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