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.

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

*For Examiner's Use*

**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]

**(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.

*For Examiner's Use*

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.

.....

.....

.....

..... [3]

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

1. .....

.....

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*

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [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

.....

.....

.....

.....

.....

..... [4]

**(ii)** proteins

.....

.....

.....

.....

.....

..... [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.

*For Examiner's Use*

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [6]

[Total: 20]

**BLANK PAGE**

**BLANK PAGE**