UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

6182837298

Biology **0610/52**

Paper 5 Practical Test **October/November 2011**

1 hour 15 mins

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 or graphs.
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 **8** printed pages.

1 You are provided with part of a fruit labelled **Y1** .

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(a) Make a large, labelled diagram of the fruit to show

- the arrangement of the seeds,
- the thickness of the fruit wall.

[5]

- Remove one seed.

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(b) Describe the **external** appearance of this seed.

.....

..... [2]

(c) (i) Describe how you could carry out food tests on the internal structure of the seed to show if the food material stored by the seed contained any of the following.

fat .....

.....

.....

starch .....

.....

..... [4]

- Remove three more seeds.
- Remove the testa (seed coat) from each seed.

(ii) Test the internal structure of the seeds for fat and starch.
Record your observations and conclusion in Table 1.1.

Table 1.1

test	initial observation	final observation	conclusion
fat	……	……	……
starch	……	……	……

[4]

These seeds can germinate, grow, flower and produce seeds within one year.

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Fig. 1.1 shows a seedling which has grown from a seed taken from fruit **Y1**.

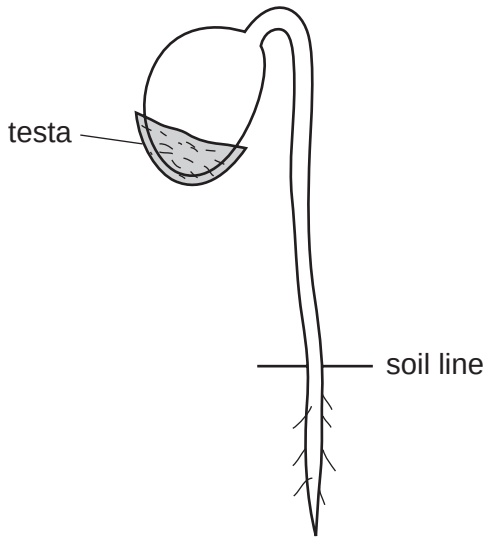

Fig. 1.1

(d) (i) Complete the labelling of the seedling on Fig. 1.1.
The testa of this seedling has been labelled for you. [2]

(ii) Describe how you would germinate these seeds.
Include the environmental conditions required.

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..... [3]

[Total: 20]

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2 You are provided with two pieces of potato. These are long thin strips which will be called 'chips'.

The chips were cut to measure 60 mm in length.

One chip is in a concentrated salt (sodium chloride) solution, labelled **salt solution**.

The other chip is in distilled water, labelled **distilled water**.

- Remove the chip from the salt solution.
- Carefully blot it dry using a paper towel.
- Place the chip on the black card.

(a) (i) Measure the length of this chip and record it below.
Record any change in length from the original 60 mm.

length .....

change ..... [2]

(ii) Describe the appearance and texture of this chip.

.....

.....

..... [2]

- Remove the other chip from the distilled water.
- Carefully blot it dry using a paper towel.
- Place the chip on the black card.

(b) (i) Measure the length of this chip and record it below.
Record any change in length from the original 60 mm.

length .....

change ..... [2]

(ii) Describe the appearance and texture of this chip.

.....

.....

..... [2]

(c) Explain the changes that you have observed in these two chips.

For Examiner's Use

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..... [4]

A similar investigation was carried out by a group of students.

They measured the masses of five chips before putting each chip into a different concentration of sucrose solution.

The chips were left in the solutions for two hours.

After two hours each chip was removed from the sucrose solution and its mass measured.

The results are shown in Table 2.1.

Table 2.1

concentration of sucrose solution / g dm^{-3}	mass at start / g	mass after two hours / g	difference in mass / g	percentage change
0.0	1.36	1.49	+0.13	9.56
35.0	1.41	1.48	+0.07	4.96
70.0	1.46	1.47	+0.01	0.68
175.0	1.47	1.38	–0.09	–6.12
270.0	1.45	1.31	–0.14	.....

(d) (i) Complete Table 2.1 by calculating the percentage change in mass for the most concentrated solution. Show your working. Write your answer in Table 2.1.

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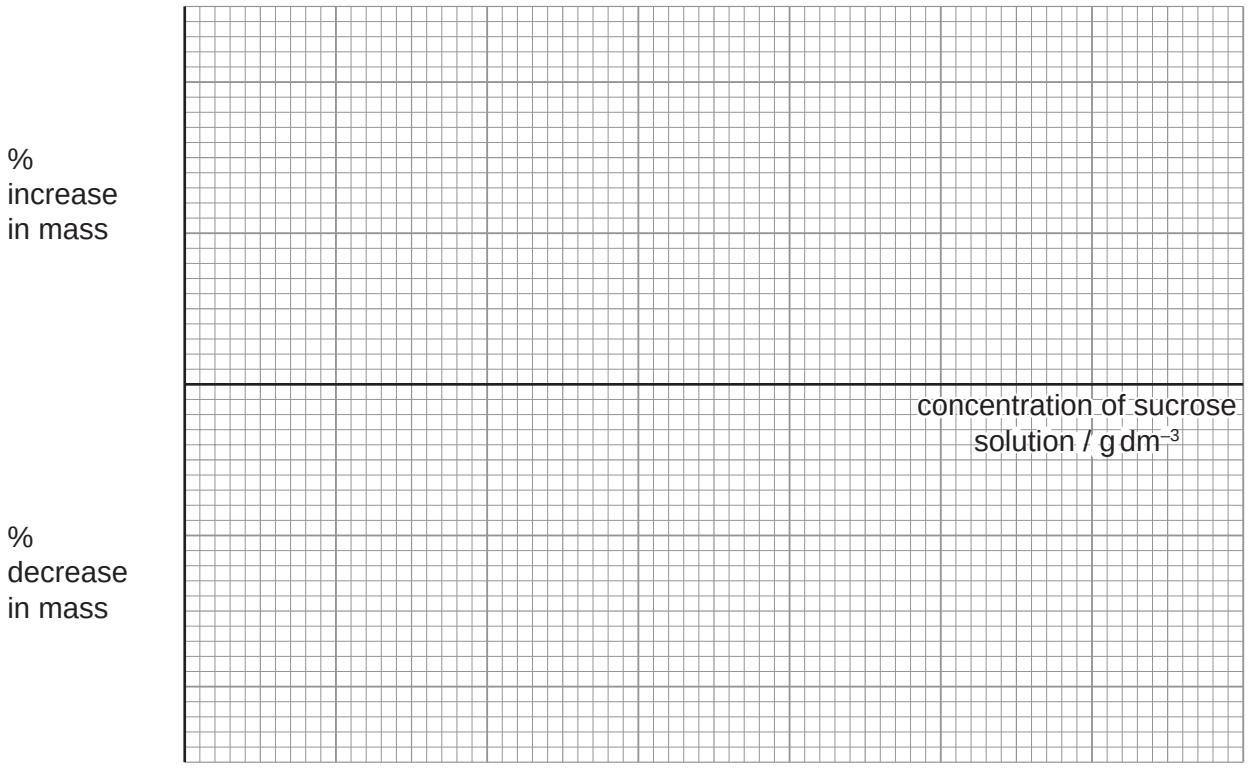
[1]

(ii) Suggest why it is necessary to calculate the percentage change in mass when comparing the chips.

.....

..... [1]

(iii) Plot a graph to show the percentage change in mass against the concentration of sucrose solution. Use the grid and axes provided.



[4]

For Examiner's Use

(e) (i) Use your graph to find the concentration of sucrose solution in which the mass of the chip would stay the same.

..... $g\,dm^{-3}$ [1]

(ii) Explain why the mass would stay the same.

.....

.....

..... [1]

[Total: 20]