EXAMINATIONS COUNCIL OF ESWATINI
Eswatini General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

BIOLOGY **6884/03**

Paper 3 Practical Test **October/November 2025**

1 hour 15 minutes

Candidates answer on the Question Paper.

Additional Materials: As listed in Confidential Instructions.
Calculator

READ THESE INSTRUCTIONS FIRST

Write your centre number, candidate number and name in the spaces provided.
Write your answers in dark blue or black pen.
You may use an HB pencil for any diagrams, graphs or rough working.
Do **not** use staples, paper clips, glue or correction fluid.
Do **not** write on the bar code.

Answer **all** questions.

You may lose marks if you do not show your working or if you do not use appropriate units.
The number of marks is given in brackets [ ] at the end of each question or part question.

The total number of marks is 40.

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1	
2	
Total	

This document consists of **7** printed pages and **1** blank page.

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

1 When plant tissue is placed in solutions with different water potentials, water molecules move between the cells and the solution.

You are going to investigate the effect of immersing plant tissue in solutions with different water potentials.

Beakers **A** and **B** contain salt solutions with different water potentials. Cylinders of fresh potato tissue, both measuring 50 mm in length, were cut and one cylinder was immersed in each solution. The cylinders have been left in the solutions for 24 hours.

Fig. 1.1 shows one of the cylinders of fresh potato tissue.

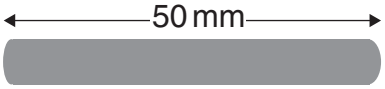


Fig. 1.1

(a) (i) Carry out the following procedure:

1. Using forceps, remove the potato cylinder from beaker **A**.
2. Remove excess solution from its surface using the paper towel provided.
3. Place it on a white tile.
4. Measure and record the length of the potato cylinder in **(a)(i)**.
5. Repeat steps 1 – 4 with the potato cylinder from beaker **B**.

length of potato cylinder from beaker **A** .....

length of potato cylinder from beaker **B** .....
[2]

(ii) Use your measurements to calculate and record the actual change in length of each potato cylinder.

change in length for potato cylinder in beaker **A** .....

change in length for potato cylinder in beaker **B** .....
[2]

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(b) Examine the texture of the potato cylinders and record your observations.

Note: *There is no harm in handling the potato cylinders with bare hands.*

texture of potato cylinder from beaker **A**

.....

texture of potato cylinder from beaker **B**

.....

[2]

(c) Use your measurements and your answer to **1(b)** to explain what happened to bring about changes in the potato cylinder in solution **B**.

.....

.....

.....

.....

.....

..... [3]

(d) State the dependent variable in this investigation.

..... [1]

(e) State **three** variables which should have been controlled in this investigation.

1 .....

2 .....

3 .....

[3]

(f) State why it would be important to repeat this investigation.

.....

..... [2]

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(g) In a different experiment, some students investigated the effect on similar potato cylinders of immersing them in sucrose solutions of different concentrations.

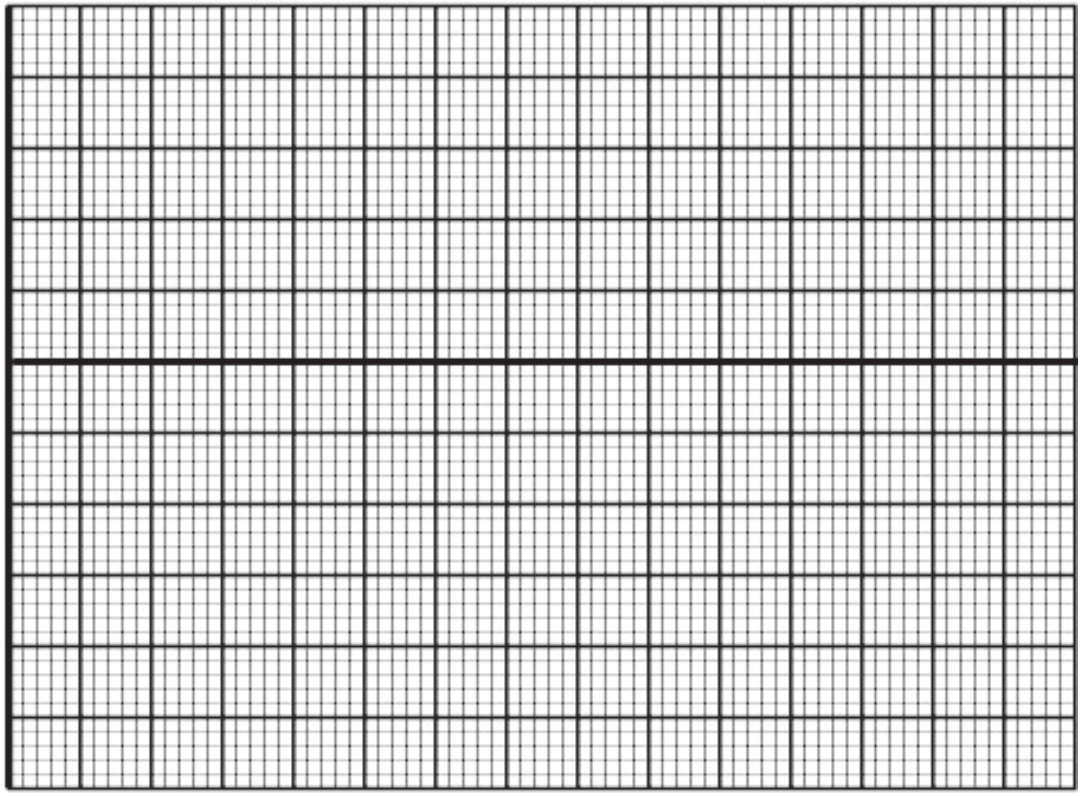
Table 1.1 shows the results of the experiment.

Table 1.1

concentration of sucrose solution / mol per dm^3	change in length / mm
0.0	10
0.2	4
0.4	−2
0.6	−7
0.8	−10

(i) On the grid, plot a line graph of the data shown in Table 1.1.

Join your plotted points with ruled, straight lines.



[5]

(ii) State the conclusion for this investigation.

.....

..... [1]

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(iii) Use your graph to find the concentration of sucrose in which the length of the potato cylinder did not change. Show your working on your graph.

..... [2]

[Total: 23]

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2 **(a)** You are provided with halves of two fruits, **C** and **D**.

(i) State **one** visible similarity in the fruits **C** and **D**.

.....

..... [1]

(ii) Complete Table 2.1 with **three** visible differences between the fruits.

Table 2.1

	C	**D**
difference 1	....	....
difference 2	....	....
difference 3	....	....

[3]

(b) In the space below, make a large drawing of fruit **C**

[5]

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(c) (i) Measure and record the length of the diameter of the cut surface of fruit **C**.

length of diameter of fruit **C** .....

..... mm [1]

(ii) Draw a line across the diameter **of your drawing** of fruit **C**.

Measure and record the length of the diameter **of your drawing** of fruit **C**.

length of diameter **of your drawing** of fruit **C** ..... mm [1]

(iii) Using your measurements in **2(c)(i)** and **2(c)(ii)**, calculate the magnification of your drawing of fruit **C** compared to the fruit **C** you were provided with.

Give your answer to **two** decimal places.

..... [3]

(d) (i) Add a drop of iodine solution to each of the cut surfaces of specimens **C** and **D** and record your observations.

specimen **C** .....

specimen **D** .....

[2]

(ii) State what can be concluded from your observations in **(d)(i)**.

specimen **C** .....

specimen **D** .....

[1]

[Total: 17]

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