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Centre Number	Candidate Number	Name

CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education
Advanced Subsidiary Level and Advanced Level

BIOLOGY **9700/03**

Paper 3 Practical Test AS

October/November 2003

1 hour 15 minutes

Candidates answer on the Question Paper.
Additional Materials: As listed in Instructions to Supervisors.

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 in the spaces provided on the Question Paper.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** 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.
You are advised to spend 45 minutes on Question 1 and 30 minutes on Question 2.

If you have been given a label, look at the details. If any details are incorrect or missing, please fill in your correct details in the space given at the top of this page.

Stick your personal label here, if provided.

For Examiner's Use	
1	
2	
Total	

This document consists of **4** printed pages, **3** blank pages and a Report Form.

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University of Cambridge Local Examinations Syndicate
[Turn over

Question 1 [45 minutes]

You are required to compare the amount of reducing sugar present in three different fruits.

You are provided with:
- a fresh tomato or a piece of tomato, labelled **S1**
- some fresh grapes or similar fruit, labelled **S2**
- a piece of fresh grapefruit or similar fruit, labelled **S3**

You are also provided with a 5% solution of glucose, labelled **S4**, and Benedict's solution.

Crush the tomato, separately, in the container provided. Extract 0.5 cm^3 of juice with a syringe and place the juice in a test tube, labelled **W1**. Wash out the container.
Repeat with the other fruit, labelling test tubes **W2** and **W3** as appropriate.

Using **S4**, the 5% glucose solution, make up further solutions of 0.5% and 0.25% glucose, and label these **S5** and **S6** respectively.
Place 0.5 cm^3 of each of the three glucose solutions into separate test tubes appropriately labelled **W4**, **W5** and **W6**.
Carry out Benedict's test using 1 cm^3 of Benedict's solution in each of the six test tubes, **W1** to **W6**, taking steps to ensure the reliability of the Benedict's tests.

(a) (i) Enter your observations of the results of the Benedict's tests in Table 1.1.

Table 1.1

solution	observations
W1	
W2	
W3	
W4	
W5	
W6	

[4]

(ii) Explain how you prepared the 0.5% and 0.25% glucose solutions.

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.....[2]

(iii) Explain how you ensured the reliability of the Benedict's tests.

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.....[3]

(iv) Explain the purpose of testing the glucose solutions, **W4** to **W6**, with Benedict's solution.

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.....[1]

(b) From your results, state the conclusions you would draw about the concentrations of reducing sugars present in each of the three fruits.

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.....[4]

(c) Suggest **one** reason why this investigation might not give an accurate measurement of the sugar content of these fruits.

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.....[1]

[Total : 15]

Question 2 [30 minutes]

You are provided with a slide of a transverse section of a dicotyledonous leaf, labelled **K1**.

Place the slide on your microscope and view the specimen using low power.

(a) Make a large, labelled, low power plan diagram to show the distribution of the tissues in the area of the section indicated in Fig. 2.1.

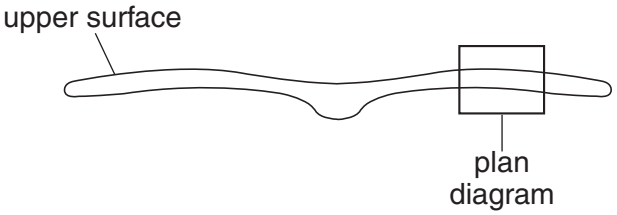


Fig. 2.1

[6]

(b) From your observation using high power, compare the structure of the cells immediately below the uppermost layer of cells in the section with those immediately above the lowest layer of cells in the section.

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.....[4]

[Total :10]

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REPORT FORM

The teacher responsible for this subject is asked to answer the following questions.

(a) Was the candidate physically handicapped in drawing or in using a microscope or is the candidate colourblind? If so, give brief details.

(b) Was the candidate handicapped by deficient material or apparatus? If so, give brief details.

(c) Was it necessary to make any substitutions for the materials sent from Cambridge, or recommended in the confidential instructions? If so, give brief details of the circumstances.

(d) Any comments.

Signed ……

N.B. Information that applies to all candidates need be given on the first candidate's answer book only.