Centre Number	Candidate Number	Name

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

BIOLOGY **9700/03**

Paper 3 Practical Test AS

May/June 2004

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 in the spaces provided at the top of this page.
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.
The number of marks is given in brackets [ ] at the end of each question or part question.
You are advised to spend 40 minutes on Question 1 and 35 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 **5** printed pages, **2** blank pages and a Report Form.

© UCLES 2004

1 You are provided with three solutions, **S1**, **S2** and **S3**. One of the solutions contains glucose, one contains another carbohydrate and the third contains a protein. The solutions **may not** be in that order.

You are required, using only the reagents provided, to identify each of the solutions, **S1**, **S2** and **S3**.

(a) (i) Complete the table below giving the test that you used which **positively** identified each of the solutions.

solution	reagent(s) used	observations	conclusion
S1			
S2			
S3			

[4]

(ii) Describe the **method** that you used to identify the carbohydrate solution that was not glucose.

.....

.....

.....

.....

.....[3]

© UCLES 2004

(iii) Describe how the test you used for glucose can be used as a semi-quantitative test.

.....

.....

.....

.....

.....

.....[4]

[Total : 11]

© UCLES 2004

2 **K1** is a stained, longitudinal section of a young root tip. Some cells are undergoing mitosis.

Use your microscope to examine carefully the regions labelled **X** and **Y** in Fig. 2.1.

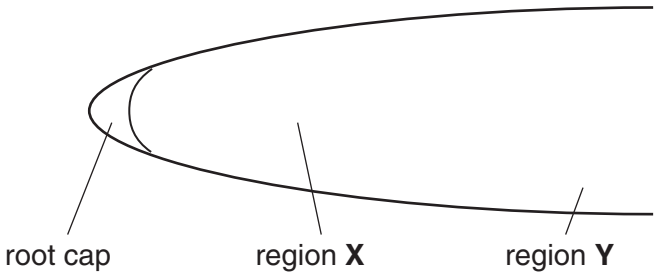


Fig 2.1

(a) Make a large, labelled, high-power drawing of a single cell in either anaphase or metaphase.

Identify the stage shown.

[4]

© UCLES 2004

(b) (i) Make a labelled, high-power drawing of **two** cells, to the same scale, from region **X**.

One cell should be at interphase, the other at or just after telophase.

[6]

(ii) Make a large, high-power drawing of one cell from region **Y**, to the same scale as you used in **(b)(i)**.

Annotate your drawing to indicate how it differs from the cells you drew in **(b)(i)**.

[4]

[Total : 14]

© UCLES 2004

[Turn over

BLANK PAGE

University of Cambridge International Examinations is part of the University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.

BLANK PAGE

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? 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.

© UCLES 2004