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

BIOLOGY **9700/03**

Paper 3 Practical Test AS

October/November 2004

CONFIDENTIAL INSTRUCTIONS

Great care should be taken to ensure that any confidential information given does not reach the candidate either directly or indirectly.

Instructions for preparing apparatus

These instructions give details of the apparatus required for each candidate for each experiment in this paper. A summary of the questions that will be presented to the candidate is included, where appropriate, to allow the Biology teacher to test the apparatus appropriately. **No access to the question paper is permitted in advance of the examination session.**

If a candidate breaks any of the apparatus, or loses any of the material supplied, the matter should be rectified and a note made in the Supervisor's Report.

Candidates must be provided with a microscope with low power and high power objectives (e.g. $\frac{2}{3}$ in and $\frac{1}{6}$ in). Each candidate must have the sole use of a microscope for 30 minutes.

Supervisors are advised to remind candidates that **all** substances in the examination should be treated with caution. Pipette fillers and safety goggles should be used where necessary.

In accordance with the COSHH (Control of Substances Hazardous to Health) Regulations, operative in the UK, a hazards appraisal of the examination has been carried out.

The following codes are used where relevant.

C = corrosive substance

F = highly flammable substance

H = harmful or irritating substance

O = oxidising substance

T = toxic substance

If you have any problems or queries regarding these Instructions, please contact CIE
by e-mail: International@ucles.co.uk,
by phone: +44 1223 553554,
by fax: +44 1223 553558
stating the Centre number, the nature of the query and the syllabus number quoted above.

This document consists of **2** printed pages.

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Each candidate must be provided with the following apparatus and materials.

To be supplied by the Centre

Question 1

The candidates will be determining the change in length of strips of potato after treatment with sucrose solution.

Each candidate with require:

(i) A Petri dish lid containing 10 g of sucrose, labelled **C**.

(ii) Three strips of freshly cut, peeled Irish potato tuber, approximately 5 mm x 5 mm and longer than 50 mm. The strips should be placed in a covered Petri dish, labelled **P**. Ideally they should be prepared immediately before the examination.

If prepared in advance, the strips should be stored in a plastic bag and kept cool, to avoid any loss of water or enzymic browning.

Slices of potato can be cut with a large kitchen knife and strips produced using a scalpel. Please do not use cork borers because this may damage the tissues.

If potato is not available, a locally available alternative such as yam or carrot may be substituted. Please record any substitutions on the report form on the back of the first candidate's script.

(iii) Paper towels.

(iv) A ruler measuring in mm.

(v) A scalpel or sharp knife.

(vi) A stopwatch or sight of a clock with a second hand.

(vii) A white tile or cutting board.

(viii) Forceps.

(ix) A Petri dish base, labelled **S** (so that the label will not wash off).

(x) Access to a balance that can measure 0 to 10 g to an accuracy of 0.1 g. The balance could be shared between two or more candidates if this is necessary, but every effort should be made to minimise sharing and to plan the careful supervision of candidates sharing balances.

(xi) A measuring cylinder of between 10 and 50 cm^3.

Question 2

Each candidate will require:

(i) Slide **K1 and K2** (from Cambridge).

(ii) Eye-piece graticule (see laboratory list on page 32 of syllabus). These are available on transparent photographic film from many laboratory equipment suppliers. They can be made by photographing a white on black scale onto 35 mm black and white film, and processing the resulting negatives. After processing these should have on them a small black scale on a transparent backing, suitable for cutting out as a graticule. This should be completed well before the examination.

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