CAMBRIDGE INTERNATIONAL EXAMINATIONS

General Certificate of Education Advanced Subsidiary Level and Advanced Level

BIOLOGY 9700/3

PAPER 3 Practical Test AS **MAY/JUNE SESSION 2002**

CONFIDENTIAL INSTRUCTIONS

1 hour 15 minutes

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

Instructions for preparing apparatus

These instructions give details of the apparatus required by each candidate for each experiment in this paper. A summary of the questions that will be presented to the candidates 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 hazard 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.org.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.

These instructions consist of 3 printed pages and 1 blank page.

© CIE 2002
UNIVERSITY of CAMBRIDGE
Local Examinations Syndicate
[Turn over

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 osmotic effect of five different sugar solutions of unknown concentration on potato tuber tissue.

(i) A Petri dish containing 20 cm^3 of a 1.0 M sucrose solution, **labelled W3**.
The solution should be prepared by dissolving 34.2 g of sucrose in 100 cm^3 of distilled water.

(ii) A Petri dish containing 20 cm^3 of a 0.8 M solution of sucrose, **labelled W1**.

(iii) A Petri dish containing 20 cm^3 of a 0.6 M solution of sucrose, **labelled W5**.

(iv) A Petri dish containing 20 cm^3 of a 0.4 M solution of sucrose, **labelled W4**.

(v) A Petri dish containing 20 cm^3 of a 0.2 M solution of sucrose, **labelled W2**.

(vi) Ten strips of freshly cut, peeled potato tuber, approximately 2 $\times$ 2 mm, and longer than 5 cm, labelled **W6**.

Ideally, the strips 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.

(vii) Paper towel.

(viii) A ruler, measuring in mm.

(ix) A scalpel or sharp knife.

(x) Sight of a stopwatch or clock.

(xi) A white tile or cutting board.

Question 2

(i) Slide **K7** (from Cambridge).

(ii) A hand lens.

(iii) A ruler, measuring in mm, as above.

To be supplied by Cambridge

(i) Answer books, which also contain the questions.

(ii) Slide **K7** (Question 2 and shared between two candidates).

RETURN OF EXAMINATION MATERIALS TO CAMBRIDGE

Please read the following instructions carefully.

Immediately after the examination, the slides must be returned to Syndicate Buildings in the containers in which they were received, using the self-adhesive label for the parcel; they must not be included in parcels of scripts. On occasion, it may be possible for the Syndicate to offer certain slides or materials, used in the examination, for sale to Centres. In this case, an Order Form will be enclosed with the materials sent from Cambridge for the examination. Slides and containers not returned in good condition will be charged at the rate of £3 per item.

REPORT FORM

In order to minimise the disadvantages of a practical examination at which the Examiner is not present, the teacher responsible for the examination is asked to complete the Report Form on the back cover of the script of the candidate whose name appears first on the attendance register. Further comments by teachers need only be made on those scripts where difficulties are encountered.

BLANK PAGE