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

CONFIDENTIAL INSTRUCTIONS

Great care should be taken to ensure 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 (e.g. $\frac{2}{3}$in = 16 mm = × 10) and high power (e.g. $\frac{1}{6}$in = 4 mm = × 40) objectives. Each candidate must have the sole use of a microscope for 35 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.

This document consists of **3** printed pages and **1** blank page.

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

Question 1

Candidates will be required to carry out tests for reducing sugars, non-reducing sugars and proteins.

Each candidate will require:

(i) Benedict's solution labelled as such.

(ii) Iodine in potassium iodide solution, labelled as such.

(iii) Biuret reagent or biuret reagents, labelled as such (5% potassium hydroxide and 1% copper sulphate solution).

(iv) Dilute (1.0 mol dm^{-3}) hydrochloric acid, labelled as such.

(v) 5 g sodium hydrogen carbonate powder, labelled as such, and a spatula.

(vi) 10 cm^3 of each of the following solutions:

1% albumen solution, made by dissolving dried albumen in water at 90 °C, labelled **S1**.

1% sucrose solution labelled **S2**. It is recommended that you use fresh analar sucrose. Well in advance of the examination, test the sucrose solution by heating with Benedict's solution. A blue colour should be obtained. If any other colour is obtained, please replace the sucrose with analar sucrose.

1% glucose solution labelled **S3.**

(vii) Eight test-tubes with rack, or a smaller number and means to wash them.

(viii) Pipette or syringe graduated to 10 cm^3 and means of washing it.

(ix) Water bath at 90 °C or above, or beaker, Bunsen, tripod and gauze.

(x) Glass marker pen.

(xi) Stopwatch, stopclock or sight of a clock with a second hand.

Question 2

Each candidate will require:

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

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To be supplied by Cambridge:

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

(ii) Slide **K1** (for 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 Cambridge 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 CIE 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

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.

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