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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 2006

1 hour 15 minutes

CONFIDENTIAL INSTRUCTIONS

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

If you have any problems or queries regarding these Instructions, please contact CIE
by e-mail: International@cie.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 **6** printed pages and **2** blank pages.

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UNIVERSITY of CAMBRIDGE
International Examinations

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Instructions for preparing apparatus

These instructions give details of the apparatus required by each candidate for each exercise and 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.**

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 objective lens, e.g. ×10 (equal to 16 mm or $\frac{2}{3}$″)
- High-power objective lens, e.g. ×40 (equal to 4 mm or $\frac{1}{6}$″)
- Eyepiece graticule fitted within the eyepiece and visible in focus at the same time as the specimen

Each candidate must have sole, uninterrupted, use of the microscope for at least 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

Centres are reminded that they are **not** permitted to open the question paper envelopes before the examination. Centres are also referred to the Handbook for Centres 2005, and in particular Section 3.1.2 (c) (i), Security of Question Papers and Examination Materials, as well as 3.3.11.1, Practical Examinations in Science Subjects.

If there are any difficulties with any aspect of setting up this practical examination that the Centre is not able to sort out, it is essential for Centres to contact the Product Manager, Dr Rick Nelms, as soon as possible by e-mail to international@cie.org.uk, by fax to +44 1223 553558 or by phone to +44 1223 553554.

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Confidential Instructions

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

Question 1

Each candidate will require:

(i) Four leaves labelled, **K1**, **K3**, **K4** and **K5**, taken from a dicotyledonous plant, for example *Impatiens* (Balsam, Busy Lizzy).
It is important that the leaf is not too hairy and should be soft when wilted.

Leaf **K1** should be freshly picked and healthy – turgid and not wilted. **No** petroleum jelly should be put on it.
Leaf **K3** should be freshly picked (within 24 hours of the examination) – turgid and not wilted. It should be covered on **both sides** with petroleum jelly.
Leaf **K4** should be picked within three days of the examination and coated on the **underside** with petroleum jelly.
Leaf **K5** should have been picked at least 1 week before the examination and coated on the **upper side** with petroleum jelly.

K1 and K3 should appear the freshest
K4 wilted but not dry
K5 the most withered and dry

The descriptions of the leaves in the examination paper may differ from the information above.

(ii) A bottle of clear nail varnish or similar labelled, **K2**, with applicator brush.

(iii) Forceps.

(iv) Microscope with:
- Low-power objective lens, e.g. ×10 (equal to 16 mm or $\frac{2}{3}$″)
- High-power objective lens, e.g. ×40 (equal to 4 mm or $\frac{1}{6}$″)
- Eyepiece of graticule fitted within the eyepiece and visible in focus at the same time as the specimen.

Each candidate must have sole, uninterrupted, use of a microscope for at least 35 minutes.
Candidates will need the microscope for question 1b and 1c. Candidates who start with question 2 will need to be given the microscopes when they have completed question 2 and question 1d.

(v) Two microscope slides and two coverslips.

(vi) Dropping pipette.

(vii) Small beaker or similar.

(viii) Access to water.

Question 2

Each candidate will require:

(i) No additional equipment.

MATERIALS TO BE SUPPLIED BY CAMBRIDGE

(i) Question papers.

REPORT FORM

The teacher responsible for the examination is asked to fill in the Report Form on pages 7 and 8 of these Confidential Instructions. For Centres where more than one script envelope is used, there must be a copy of the complete Report Form in every script packet.

These report forms are vital in order to allow the examiners to assess all candidates a fairly as possible, and should always be competed by every Centre.

A copy of the seating plan for the examination room must also be enclosed in each script envelope.

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This form should be completed and sent to the examiner with the scripts.

REPORT ON PRACTICAL BIOLOGY

A Level

October/November Session 2006

**The Supervisor or Teacher responsible for the subject should provide the following information.*

1 Was any difficulty experienced in providing the necessary materials? If so, give brief details.

2 Give details of any difficulties experienced by particular candidates, giving names and candidate numbers. Reference should be made to:

(a) difficulties arising from faulty specimens or microscopes;

(b) accidents to apparatus or materials;

(c) assistance provided in case of colour-blindness;

(d) any other information that is likely to assist the Examiner, especially if this cannot be discovered from the scripts.

All other cases of individual hardship, e.g. illness or disability, should be reported direct to CIE on the normal 'Special Consideration Form' as detailed in Part 6 of the Handbook for Centres.

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3 Enclose a plan of work benches with the scripts, giving details of the candidate numbers of the places occupied by the candidates for each session. The space below can be used for this, or it may be on separate paper.

Declaration (to be signed by the Principal)

The preparation of the practical examination has been carried out so as to maintain fully the security of the examination.

Signed .....

Name (in block capitals) .....

Centre number .....

Centre name .....

If scripts are required by CIE to be despatched in more than one envelope, it is essential that a copy of the relevant Supervisor's Report and the appropriate seating plan(s) are sent inside **each envelope**.

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