



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

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BIOLOGY

9700/31

Paper 31 Advanced Practical Skills

October/November 2008

CONFIDENTIAL INSTRUCTIONS

2 hours

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.



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. **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. $\times 10$ (equal to 16 mm or $\frac{2}{3}$ ")
- High-power objective lens, e.g. $\times 40$ (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 – Centres may use their own eyepiece graticules.

Each candidate must have sole, uninterrupted, use of the microscope for at least 55 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

H = harmful or irritating substance

T = toxic substance

F = highly flammable substance

O = oxidising substance

N = harmful to environment

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, and in particular Section 3.1.2 (d) (i), Security of Question Papers and Examination Materials, as well as 3.3.11, Special Instructions for Practical Examinations in the General Qualification Science Syllabuses.

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.

Confidential Instructions

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

Question 1

Each candidate will require:

- (i) About 20 cm^3 of 1 mol dm^{-3} sucrose solution in a Petri dish, labelled **S1** (e.g. made by dissolving 34.23 g of sucrose in 80 cm^3 of distilled water and making up to 100 cm^3).
- (ii) About 20 cm^3 distilled water in a beaker, labelled **W**.
- (iii) Two pieces of fleshy scale leaf from a fresh onion, as shown in Fig. 1.1, and immediately placed in a beaker of distilled water, labelled **O**.



Fig. 1.1

- (iv) An empty Petri dish and empty beaker or container.
- (v) Syringe to measure 10 cm^3 .
- (vi) A dropper pipette.
- (vii) Forceps – sharp pointed.
- (viii) A scalpel or sharp knife.
- (ix) Tile or cutting surface.
- (x) Five microscope slides with cover slips.
- (xi) Means of marking glassware e.g. permanent marker pen.
- (xii) Microscope as described on page 2.
- (xiii) Paper towel.

The supervisor should, out of sight of the candidates, try question 1 and record the results on the Supervisor's report which should be sent with the scripts. The invigilator must **not** be involved in testing question 1.

Question 2

No further materials required. The microscope will **not** be required for question 2.

RETURN OF EXAMINATION MATERIALS TO CAMBRIDGE

There are no materials to return to CIE on this occasion.

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 each script parcel.

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

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

- 3 Enclose a plan of work benches with the scripts, giving details of the candidate number and the places occupied by the candidates for each session. The space below can be used for the plan. 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**.

If there is insufficient space on this form, please attach further sheets including the information required.

