



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

BIOLOGY

5090/03

Paper 3 Practical Test

May/June 2007

CONFIDENTIAL INSTRUCTIONS

1 hour 15 minutes

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 **4** printed pages, **2** blank pages and **1** Supervisor's report.



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.

If arrangements are made for different sessions for different groups of candidates, care must be taken to ensure that the different groups of candidates are effectively isolated so that **no information passes between them.**

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. There are **no** exceptions to this. Centres are also referred to the Handbook for Centres 2006, 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 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) Small plastic bottle e.g. 250–500 cm³ plastic drink bottle.
- (ii) Large beaker or other container in which to fit the plastic bottle leaving a space of at least 1.5 cm around the bottle. This should be supplied half full of ice cold water.
- (iii) Supply of water at 40°C. Each candidate will need enough water to half fill the bottle twice during the examination.
- (iv) Supply of hot water at 50°C. Each candidate will need enough water to half fill the beaker or container once during the examination.
- (v) Thermometer to read 0°C to 110°C.
- (vi) Sight of a clock or watch with second hand.
- (vii) Ruler, mm.

Question 2

Each candidate will require:

- (i) A fresh dicot leaf with petiole e.g. hibiscus or pelargonium, or any which will shrivel when dried for three days, labelled **Leaf A**.
A similar leaf with petiole that has been picked for one week and allowed to dry and shrivel, labelled **Leaf B**.
A similar leaf with petiole that has been picked, the **upper** surface immediately coated with petroleum jelly, then left for one week and allowed to dry and shrivel, labelled **Leaf C**.
A similar leaf with petiole that has been picked, the **lower** surface immediately coated with petroleum jelly, then left for one week, labelled **Leaf D**.

Note: Leaves **A, B, C** and **D** must be from the same species. They should also be the same size before any treatment.

- (ii) 2 cm length from a stick of celery that has been left to stand in a beaker of red or blue ink or dye, labelled **E**.
The dye should have travelled all the way up the petiole.
If celery is not available a leaf stalk from a melon or squash or related plant, e.g. gourd, may be used.
- (iii) White tile or similar.
- (iv) paper towel.
- (v) Sharp knife or scalpel.
- (vi) Hand lens.
- (vii) Ruler, mm.

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

REPORT ON PRACTICAL BIOLOGY

General Certificate of Education Ordinary Level

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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 specimens;
 - (b) accidents to apparatus or materials;
 - (c) any other information that is likely to assist the Examiner, especially if this cannot be discovered from the scripts.

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.



- 3 A plan of work benches, giving details of the candidate numbers of the places occupied by the candidates for each session, must be enclosed with the scripts. 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 this 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**.

