



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

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**BIOLOGY**

**0610/52**

Paper 5 Practical Test

**May/June 2013**

CONFIDENTIAL INSTRUCTIONS

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

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If you have any problems or queries regarding these Confidential Instructions, please contact CIE

by email    [Info@cie.org.uk](mailto:Info@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.

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This document consists of **5** printed pages and **3** blank pages.



**READ THESE INSTRUCTIONS FIRST**

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. **Testing must be done out of sight of all candidates. No access to the question paper is permitted in advance of the examination.** Centres are reminded that candidates are expected to follow the instructions on the question paper and record all their results. They will not be penalised if these results are not what they expect.

The Supervisor should make sure the Supervisor's Report is fully completed and a copy is enclosed with each packet of scripts.

It is assumed that the ordinary apparatus of a science laboratory will be available, including a supply of purified water (distilled or deionised).

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.**

**All specimens should carry only the code letters and numbers as indicated and their identity should not be revealed to the candidates.**

Supervisors should ensure that all specimens have the correct identity attached to the specimen and that these are **not** removed during 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.

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 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

**N** = harmful to the environment

Centres are reminded that they are **not** permitted to open the question paper envelopes before the examination.

If there are any difficulties with any aspect of setting up this practical examination that the Centre is not able to resolve, it is essential for Centres to contact the Product Manager as soon as possible by **email** to [info@cie.org.uk](mailto:info@cie.org.uk), by **fax** to +44 1223 553558 or by **phone** to +44 1223 553554.

**Question 1**

Each candidate should be provided with:

- (i) two similar shoots of non-woody dicotyledonous species such as beans, pelargonium (geranium) or any young brassica (e.g. mustard)

Shoots should be cut at least 15 cm in length, with several leaves. One of the shoots should be left with the leaves intact. The other shoot needs to have the leaves removed. To be presented in two **identical** test-tubes of water. Do not allow the shoots to wilt – place immediately into water.

The shoot **with leaves** should be presented with the cut end in a test-tube containing **15 cm<sup>3</sup>** of water. Run a small quantity of oil onto the surface by dropping down the inside of the tube using a dropping pipette. Do not shake.

The shoot **without leaves** should be presented with the cut end in a test-tube (**identical** to the test-tube containing the shoot with leaves) containing **20 cm<sup>3</sup>** of water. Oil layer to be added as in previous tube. Do not shake.

Both test-tubes should be supported side by side. On the test-tube containing the shoot without leaves, draw a line to indicate to the candidate the original height of the water. On the test-tube containing the shoot with leaves draw a line at exactly the same height up the test-tube as that containing the shoot without leaves.

- (ii) ruler (mm)
- (iii) white tile
- (iv) scalpel
- (v) small container such as a beaker, containing 15 cm<sup>3</sup> of coloured aqueous solution of bright red food colouring, labelled **coloured water**
- (vi) timing device or view of a clock with a second hand
- (vii) access to paper towels
- (viii) hand lens (at least ×6) (also required for Question 2)
- (ix) small beaker of water (100 cm<sup>3</sup>), labelled **water**

Before the day of the examination, the Supervisor's should test that the chosen shoots take up coloured water and that this can be seen in sections of the shoot's stem after 15 minutes. The results and species used need to be reported in the Supervisor's Report and a photograph (or detailed line drawing) supplied.

The Supervisor (**not** the Invigilator) is expected to carry out the practical aspects of **Question 1** and record their results in the space provided in the Supervisor's Report. This must be done during the examination, using the same apparatus and reagents as the candidates but out of sight of the candidates.

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

**SUPERVISOR'S REPORT ON PRACTICAL BIOLOGY**

**IGCSE**

**May/June Session 2013**

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

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

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

**(a)** difficulties with specimens or materials;

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**(b)** accidents to apparatus or materials;

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

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

- 3** During the examination, the Supervisor should, **out of sight of the candidates**, carry out **Question 1**, using the same apparatus and reagents as the candidates. Results should be recorded in the space on page **8** (**not** on a spare Question Paper). The Invigilator should **not** carry out **Question 1**.



Please name the plant species used to supply the shoots and attach a photograph (or detailed line drawing).

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

**Declaration** (to be signed by the Principal or the Examinations Officer)

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 to be despatched in more than one packet, it is essential that a copy of the Supervisor's Report and the appropriate seating plan(s) are inside **each packet**.

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