



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

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**BIOLOGY**

**0610/51**

Paper 5 Practical Test

**May/June 2012**

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.**

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**READ THESE INSTRUCTIONS FIRST**

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

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

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This document consists of **6** printed pages and **2** blank pages.



**READ THESE INSTRUCTIONS FIRST**

These instructions give details of the apparatus reagents and specimens required by each candidate for each experiment in this paper. A summary of the questions that will be presented to candidates is included, where appropriate, to allow the teacher to test the apparatus appropriately. **No access to the question paper is permitted in advance of the examination.**

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

**Question 1**

Each candidate should be provided with:

- (i) a piece of tubular leaf at least 8 cm long and 3 mm in diameter, standing in water labelled **R**. The pointed top should be removed from the piece given to the candidate.

A second piece of similar leaf approximately 2 cm long, on moist filter paper or blotting paper in a Petri dish with a lid, labelled **S**.

Suitable species are onions *Allium cepa*, spring onions *Allium fistulosum* or chives *Allium schoenoprasum*.

Spring onions are also known as scallions, green onions or salad onions.

Large onions sold for cooking placed with the root plate just touching water, may first grow roots and then enough leaves for three or four candidates. It would take two – three weeks in a warm room for this to occur.

If spring onions (scallions) are used, the leaves are improved by standing the lower part of the white bulb in water for 3 or 4 days.

- (ii) one pair of small scissors and a knife or scalpel.
- (iii) 2 small beakers containing:  
50 cm<sup>3</sup> of 10% salt solution, labelled **salt solution**  
50 cm<sup>3</sup> water labelled **water**.
- (iv) piece of filter paper and a white tile.
- (v) a wood, plastic or glass rod.
- (vi) paper towel.
- (vii) small quantities of the solutions normally used in the Centre to test for starch, reducing sugar and protein. These must be labelled:

**Iodine solution**

**Benedict's solution**

and **biuret solution** (on both solutions if separate solutions are given)

The containers for these solutions must **not** indicate for what the solution is used to test. The examination may or may not require candidates to use these solutions.

- (viii) a test-tube in a rack, beaker or other container.
- (ix) test-tube holder or tongs.
- (x) hot water provided in an insulated container, such as a polystyrene cup. The temperature of this water should be at least 90 °C. Candidates should be given this hot water when they ask for it.

**Question 2**

Each candidate should be provided with:

- (i) a piece of string 15 cm long. It should not stretch.
- (ii) ruler with mm.

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

**REPORT ON PRACTICAL BIOLOGY**

**IGCSE**

**May/June Session 2012**

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

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

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- 2** The Supervisor or Teacher responsible for the subject is asked to carry out the experiment on the onion leaf, **R**, as described in Question 1 and to record any change in the shape of the leaf pieces by drawing them in the table below:

in water	in 5% salt solution	in 10% salt solution	in the air

- 3** Please give the name of the leaf provided as **R**.

.....



4 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;
  - (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.
- Information that applies to all candidates need only be given once.

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.

5 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 packet, it is essential that a copy of the relevant Supervisor's report and the appropriate seating plan(s) are inside each packet.

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