



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education Ordinary Level

**BIOLOGY**

**5090/31**

Paper 3 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.**



If you have any problems or queries regarding these Instructions, please contact CIE  
by e-mail: [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.

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 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 which cover Security of Question Papers and Examination Materials and 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 resolve, it is essential for Centres to contact the Product Manager as soon as possible by e-mail to [international@cie.org.uk](mailto:international@cie.org.uk), by fax to +44 1223 553558 or by phone to +44 1223 553554.

**SUPERVISOR'S INSTRUCTIONS – CONFIDENTIAL**

Each candidate to be provided with:

**Question 1**

- (i) 100cm<sup>3</sup> yeast mixture: prepared by adding 50g dried yeast to 400cm<sup>3</sup> warm water at approximately 35°C containing 50g of dissolved sucrose. Present to candidates at room temperature in two beakers, labelled **S1** and **S2**, each containing 50cm<sup>3</sup> of yeast mixture.

This needs to be prepared about 15 minutes **before** the start of the examination.

- (ii) 30g strong white flour (bread flour, gluten rich). Add 0.5g ascorbic acid to this flour and labelled **S1**.
- (iii) 30g soft white flour (oat/barley/rice flour) labelled **S2**.
- (iv) Stirrer (e.g. metal spoon).
- (v) Beaker of water to wash stirrer.
- (vi) Paper towels to wipe stirrer.
- (vii) View of a clock.
- (viii) Pen or adhesive paper label to mark the initial height of dough.
- (ix) Ruler, mm.

**Question 2**

- (i) One mature leaf attached to its supporting branch, labelled **S3**. This should be a pinnate dicotyledonous leaf without modifications for dry conditions and not covered in hairs e.g. *Rosa*, *Rubus* or other leaf with no more than five leaflets.  
This should be presented on damp paper towel in a shallow container so that it does not dry out and begin to curl.
- (ii) Hand lens (preferably ×10)

**Question 3**

- (i) Large mature flower – such as *Lilium sp.* presented on a white tile, labelled **S4**.
- (ii) Cutting implement/scalpel.
- (iii) Boiling tube.
- (iv) Means to support boiling tube.
- (v) Benedict's solution in usual dispenser, labelled 'Benedict's solution: safety hazard'.
- (vi) Iodine in potassium iodide solution in usual dispenser, labelled 'Iodine solution: safety hazard'.
- (vii) Biuret reagent in usual dispenser, labelled 'Biuret solution: safety hazard'.
- (viii) Water bath and means of heating.
- (ix) Beaker of water.



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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**

**May/June Session 2012**

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

- 1** Was any difficulty experienced in providing the necessary material for **Question 1**?

Please record the range of room temperature in each laboratory during the examination.

Was any difficulty experienced in providing the necessary material for **Question 2**?

Please sketch and identify the leaf provided as **S3**.

Was any difficulty experienced in providing the necessary material for **Question 3**?

Please identify flower **S4**.

Record the colour change for the reducing sugar test on the style tissue of **S4**.

- 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;
  - (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 in 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**.

