



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

BIOLOGY

5090/31

Paper 3 Practical Test

October/November 2013

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 **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. **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 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 in the left margin where relevant.

C = corrosive substance

F = highly flammable substance

H = harmful or irritating substance

O = oxidising substance

T = toxic substance

CONFIDENTIAL INSTRUCTIONS

Each candidate should be provided with:

Question 1

- (i) View of a clock.
- (ii) 8 large test-tubes, presented in a group with a binding e.g. rubber band or tape, supported in a container.
- (iii) 1 single large test-tube supported in a separate container.
- (iv) Marker for glass.
- (v) Thermometer.
- (vi) A supply of hot water. The water may be heated in bulk using a hot water bath with a temperature no lower than 60 °C.

Question 2

- (vii) Two similar leafy non-woody shoots of a dicotyledonous plant.

One shoot to be presented with cut end in a small container of water, labelled 'D'. This shoot should be turgid and not wilted.

The other shoot should be left out of water for 24 hours and presented to the candidate in a wilted condition in an empty container labelled 'E'.

Suitable plants for use: *Impatiens* or celery with leaves still attached.

- (viii) 10 cm³ 0.1% methylene blue solution presented in a small container, labelled 'coloured water'.
- (ix) 2 white tiles, labelled **D** and **E**.
- (x) Means to cut shoot, small knife or scalpel.
- (xi) Hand lens.
- (xii) Ruler [mm].

Please check on two similar shoots to test how far the coloured water travels up in the shoots after 5 minutes and record in the Supervisor's Report.

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

SUPERVISOR'S REPORT

General Certificate of Education Ordinary Level

October/November Session 2013

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

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

Room temperature during examination

Was any difficulty experienced in providing necessary material for Question 2?
Please name the plant species used to supply shoots **D** and **E**.

.....

Please record the following:

shoot D		shoot E	
number of sections with blue colour	distance blue coloured water has moved/mm	number of sections with blue colour	distance blue coloured water has moved/mm

- 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 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 inside **each envelope**.

