

International General Certificate of Secondary Education
CAMBRIDGE INTERNATIONAL EXAMINATIONS

BIOLOGY

0610/5

PAPER 5 Practical Test

CONFIDENTIAL INSTRUCTIONS

MAY/JUNE SESSION 2002

1 hour

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

Instructions for preparing apparatus

These instructions detail the apparatus required by each candidate for each experiment in this paper. A summary of the questions that will be presented to the candidate 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.

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.**

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

These instructions consist of 3 printed pages and 1 blank page.



Question 1

Each candidate to be supplied with:

- (i) 10 cm³ activated yeast with sucrose in a suitable container, labelled as 'yeast + sucrose solution';
- (ii) 250 cm³ beaker;
- (iii) 40 cm³ limewater in a beaker, labelled 'limewater';
- (iv) boiling tube in a boiling tube rack or other means of support;
- (v) a piece of soaked Visking tubing approximately 15 cm long and 2 cm wide, tied tightly at one end using a double knot;
- (vi) approximately 20 cm³ of thread;
- (vii) access to a tap or running water;
- (viii) scissors or a scalpel;
- (ix) sight of a clock or watch;
- (x) paper towelling.

Supervisors must use a combination of yeast (dried) and sucrose in water in such proportions that it will give an active suspension at the start of the examination.

Dried yeasts vary in their activity. **It is essential that supervisors pretest their yeast and sucrose solution and adjust the quantities accordingly.**

Suggested quantities are: 40 g sucrose + 30 g dried yeast made up with water to 1 dm³ in a large container.

Question 2

Each candidate to be supplied with:

- (i) a bean or pea seedling grown in the light, labelled **seedling A**;
- (ii) a bean or pea seedling of the same species grown in the dark, labelled **seedling B**; **both seedlings should have at least four visible leaves.**
- (iii) a dicotyledonous shoot with eight simple leaves, labelled **shoot C**; **shoot C** must contain **eight** mature leaves. Any young leaves must be removed before the shoot is given to the candidate. Each leaf must be between 4 and 8 cm long and have a smooth leaf margin.
- (iv) a bean or pea seed soaked for 24 hours of the type used to produce seedlings A and B, presented moist in a suitable container;
- (v) a sheet of A4 paper;
- (vi) a hand lens of at least x 6 magnification;
- (vii) a small scalpel or knife;
- (viii) a white tile;
- (ix) forceps.

Notes: For **seedlings A and B**

The bean or pea seeds should be soaked for 24 hours and then germinated in a suitable medium e.g. sand, vermiculite or compost.

Seedlings A should be grown in the light.

Seedlings B should be grown in a dark cupboard.

The seedlings should be allowed to grow until at least **four** leaves have developed by the day of the examination.

This should be pretested, as the time required varies from 10 to 21 days.

Remove the seeds from the medium on the day of the examination and present them to the candidates in a **fresh condition**.

Seedlings A and B and **shoot C** must not be wilted when given to the candidates.

Safety

Teachers are expected to instruct candidates to take such precautions as are laid down or advised by their Education Authority/School or College.

