



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education Ordinary Level

**AGRICULTURE**

**5038/03**

Paper 3 Practical Test

**October/November 2009**

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.**

**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

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 **2** printed pages.



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

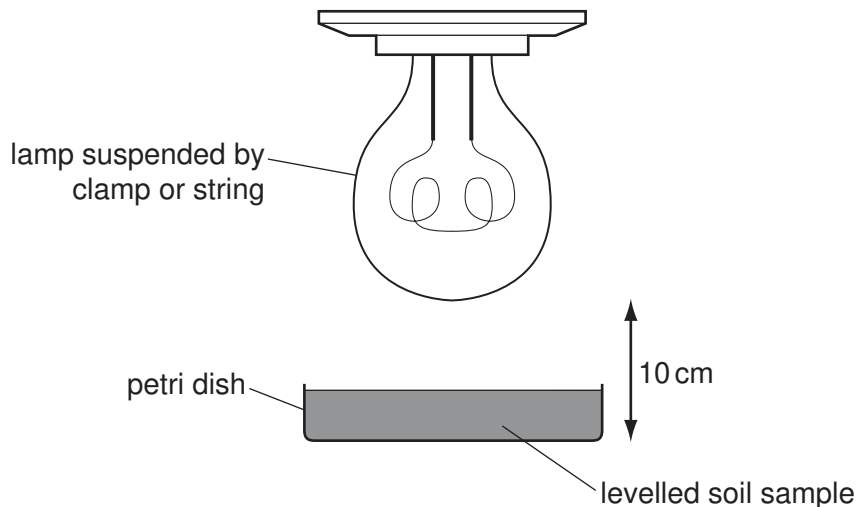
Supervisors should ensure that all specimens have the correct identity attached to the specimen and that these are not removed or altered during the examination.

**1** Each candidate will need:

- An insect pollinated flower that has parts that can be easily removed and dissected, clearly labelled **AS1**.
- A whole grass or cereal plant with roots and in flower clearly labelled **AS2**.
- A white tile or mat for putting the flower parts on.
- Scissors or a scalpel to remove parts of the flower.
- A hand lens

**2** Each candidate will need:

- A sample of sandy soil labelled **AS3**. The soil should be much lighter in colour than **AS4** (a sample sufficient to fill a petri dish)
- a sample of much darker soil labelled **AS4** (a sample sufficient to fill a petri dish)  
*The soil colour may be adjusted by adding compost, charcoal or wood ash*
- a stop clock or stop watch capable of timing 5 minutes
- a petri dish or similar small container
- a  $-10^{\circ}\text{C}$  to  $110^{\circ}\text{C}$  thermometer graduated in  $1^{\circ}\text{C}$  intervals
- a low voltage lamp minimum of 20W – 35W connected to a power supply with switch to light lamp. The lamp should be suspended 10cm above the bench surface, with a boss and clamp if not on a fixed arm
- **the candidate should not construct this apparatus**
- another boss and clamp should be available to the candidate



**3** Each candidate will need:

- a hand lens (this can be the same as used for question 1)
- access to water
- sufficient soil to pick up a small handful for:
  - a coarse sandy soil gritty by nature clearly labelled **AS5**
  - a fine clay soil at least 60% clay clearly labelled **AS6**
  - soil **AS5** can be made by adding coarse sand **AS6** can be made by adding powdered clay*
- a dark peaty organic soil (peat or soil less compost would be ideal) clearly labelled **AS7**

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