



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

AGRICULTURE

5038/03

Paper 3 Practical Test

May/June 2007

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

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.

Specimens and apparatus should be provided as follows.

Question 1 Each candidate should be provided with:

- A specimen of an annual or ephemeral weed with root, leaves, many flowers and/or many seeds, labelled **AS1**. (Suggest chickweed, groundsel, Spanish needle, *Bidens pilosa*).
- A perennial weed with tap root, rhizome or tuber and leaves/shoot, flower and fruit if possible labelled **AS2**. (Suggest couch grass, *Convolvulus sp*, Nut grass, *Cyperus rotundus*.)

Question 2 Each candidate should be provided with:

- 5 grams of Sulphate of ammonia labelled **AS3**;
- 5 grams of Calcium carbonate labelled **AS4**;
- 5 test-tubes;
- a test-tube rack/stand.

Each candidate needs access to:

- labelled dilute sodium hydroxide 0.5M in dropping bottle;
- labelled dilute hydrochloric acid 2.0M in dropping bottle;
- a permanent marker.

Question 3

Soil for **AS5** - soil with low pH

Soil for **AS6** - different soil with high pH

Both samples must be dried for at least 24 hours in an oven prior to the exam. Candidates need to weigh the soil samples with the polythene bags.

Each candidate should be provided with:

- samples of soil labelled **AS5** and **AS6** in polythene bags. (Balance should ideally be electronic or using the most accurate method available;
- **AS5** to weigh 15 grams dry;
- **AS6** to weigh 18 grams dry.

Each candidate will need:

- 2 test-tubes;
- test-tube rack;
- permanent marker.

Each candidate should have access to:

- labelled Barium sulphate;
- distilled or de-ionised water;
- soil pH indicator (*universal indicator if soil indicator not available*);
- appropriate pH colour charts.

For operational reason candidates may answer questions in any order **but must not attempt Question 3(b) before answering Question 3(a)**. Specimens for Question 1 can be used by more than one candidate.