CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

AGRICULTURE **5038/03**

Paper 3 Practical Test

CONFIDENTIAL INSTRUCTIONS October/November 2003

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.

Instructions for preparing apparatus.

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 the 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 session**.

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.

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

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.

This document consists of **2** printed pages.

UNIVERSITY of CAMBRIDGE
Local Examinations Syndicate
[Turn over

For Question 1

Each candidate will require:

(i) a dicotyledonous leaf, labelled **AS1**, at least 4 cm wide, from a plant with a distinct cuticle;

(ii) a monocotyledonous leaf, labelled **AS2**, at least 10 cm long; (The leaf should be from a species with stomata on both surfaces – small leaves of maize would be suitable.)

NB: All candidates from the Centre must be provided with leaves from the same two species. The surfaces of the leaves must not be damp. Please record the identity of specimens **AS1** and **AS2** on the Supervisor's report on the back page of the first candidate's script.

(iii) a pair of forceps;

(iv) cobalt chloride test papers for detection of water vapour (or if not available, 1 cm squares of filter paper soaked in cobalt chloride solution and then dried). These must be dry, so that they appear blue (at least 4 per candidate, spares should be available);

(v) a Bunsen burner;

(vi) transparent sticky tape;

(vii) a pair of scissors.

For Question 2

Each candidate will require:

(i) a sample of 0.5 M ammonium sulphate solution, labelled **AS3**;

(ii) a sample of 0.2 M calcium nitrate solution, labelled **AS4**;

(iii) 5 clean, dry test-tubes or the facility to wash test-tubes;

(iv) a test-tube rack;

(v) the Bunsen burner from question 1;

(vi) a test-tube holder;

(vii) a pair of safety goggles;

(viii) access to1 M hydrochloric acid, labelled **dilute hydrochloric acid**;

[C] (ix) access to 0.5 M sodium hydroxide solution, labelled **dilute sodium hydroxide solution**;

(x) 1 cm squares of aluminium foil, labelled **aluminium foil**;

(xi) dilute barium chloride solution, labelled **barium chloride solution**.

For Question 3

Each candidate will require:

No apparatus is required.

The Supervisor's Report is to be filled in on the back page of the first candidate's script. Please ensure that this is done.