

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

AGRICULTURE

5038/03

Paper 5 Practical Test

CONFIDENTIAL INSTRUCTIONS

October/November 2005

1 hour 15 minutes

Great care should be taken 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 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.

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

- Each candidate should have access to:
- Question 1
- 5 petri dish halves;
 - 5 samples taken from a potato. Each sample should be longer than 55 mm and approximately 8 mm square.
 - a scalpel;
 - a source of deionised water labelled **0% sugar solution** (approx 25 ml/candidate);
 - a source of 10% sugar solution labelled **10% sugar solution** (approx 25 ml/candidate);
 - a source of 20% sugar solution labelled **20% sugar solution** (approx 25 ml/candidate);
 - a source of 30% sugar solution labelled **30% sugar solution** (approx 25 ml/candidate);
 - a source of deionised water labelled **AS1**;
 - a ruler;
 - sight of a clock or watch;
 - a means of labelling glassware such as a wax pencil.

The volume of each sugar solution should be sufficient to fill one of the petri dish halves, so if larger petri dishes are used, more sugar solution will be needed.

- Question 2
- 10 g potassium nitrate or sodium nitrate labelled **AS2**;
 - 10 g calcium nitrate labelled **AS3**;
 - clean test tubes;
 - spatula;
 - [C] • aqueous sodium hydroxide labelled **sodium hydroxide solution**;
 - [C] • dilute hydrochloric acid labelled **hydrochloric acid**;
 - 1 cm squares of aluminium foil labelled **aluminium foil**;
 - [H] • barium chloride solution labelled **barium chloride solution** (toxic when dry or in concentrated solutions);
 - a source of heat;
 - a source of water;
 - red litmus paper.

- Question 3
- 2 large bean seeds labelled **AS4** – species/variety to be named on supervisor's report. The seeds should be soaked in water overnight;
 - scalpel.

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.