

Centre Number

Candidate Number

Name

CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

AGRICULTURE

5038/03

Paper 3 Practical Test

CONFIDENTIAL INSTRUCTIONS

May/June 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.

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 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.

For Question 1

Each candidate will require:

- (i) 20 g of accurately weighed sample of soil containing some organic material; The soil sample must have been dried at 100 °C for at least 24 hours (it will state 2 days in the examination paper) and should be labelled **AS1**.
- (ii) a metal tray suitable for heating; (The tray should be of a size suitable to be stable on top of a tripod.)
- (iii) a Bunsen burner or other source of heat capable of burning the organic material in the soil sample;
- (iv) a tripod;
- (v) access to a balance capable of weighing to within 0.5 g;
- (vi) a heatproof mat.
- (vii) container for waste burnt soil.

For Question 2

Each candidate will require:

- (i) 10 cm³ of a solution of 5 g of glucose and 5 g of albumen powder dissolved in 100 cm³ of hot water and cooled, labelled **AS2**; (Another source of protein such as an egg white or 10 cm³ of milk may be substituted for albumen if necessary – this should be stated and named in the Supervisor's Report.)
- (ii) 10 cm³ of a solution of 5 g of starch and 5 g of glucose dissolved in 100 cm³ of hot water and cooled, labelled **AS3**;
- (iii) access to iodine solution, labelled **iodine solution**;
- (iv) access to Benedict's solution, labelled **Benedict's solution**;
- [C] (v) access to 1 M sodium hydroxide solution, labelled **sodium hydroxide solution**;
- (vi) access to 1% copper sulphate solution, labelled **copper sulphate solution**;
- (vii) access to a water-bath heated at 90 °C;
- (viii) 6 clean test-tubes or the opportunity to clean and dry the test-tubes;
- (ix) test-tube rack.
- (x) goggles or other suitable eye protection.

For Question 3

Each candidate will require:

- (i) a spark plug for a petrol engine, labelled **AS4**. There should be at least one spark plug per 5 candidates.

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.