



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education Ordinary Level

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**AGRICULTURE**

**5038/03**

Paper 3 Practical Test

**October/November 2008**

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 specimens and that these are not removed or altered during the examination.

- 1 Candidates will need to be provided with leaves such as Geranium, Hibiscus or non variegated Tradescantia.

Sufficient plants are needed to provide at least **two** leaves per candidate.

Half the plants need to be exposed for at least 48 hours of high quality illumination in a warm room. The other half kept under the same conditions **BUT** in complete darkness for 48 to 72 hours.

Candidates need to be provided with freshly picked leaves, labelled **AS1** from plants exposed to light, and leaves with a V notch cut in them from the plants kept in the dark labelled **AS2**. Spare leaves should be available.

Each candidate will need:

- a Bunsen burner / heat source
- a tripod
- heat proof mat
- goggles / eye protection
- Ethanol in a dropper bottle labelled *Ethanol*
- Iodine solution in a dropper bottle labelled *Iodine*
- white tile or mat
- forceps
- scalpel
- spatula
- two boiling tubes
- 250 cm<sup>3</sup> beaker
- access to hot tap water 200 cm<sup>3</sup>
- stand or test tube holder

- 2 Each candidate will need:

- well washed boiling tubes labelled **AS3** and **AS5** filled with distilled water
- well washed boiling tube labelled **AS4** filled with 0.5M Ammonium Sulphate solution
- 3 clean dry washed test tubes
- Bunsen burner / heat source
- test tube holder
- test tube rack
- access to 0.5M Sodium Hydroxide labelled *Sodium Hydroxide*
- safety goggles
- red litmus paper

- 3 Each Candidate will need:

- 2 flowers labelled **AS6** that can be easily dissected to identify: filament, anther, stigma, style and ovary. With an ovary that can be easily dissected in half with a longitudinal cut, suggest fuchsia or hibiscus.  
*Please indicate flower provided on Supervisor's Report.*
- white tile
- forceps
- scalpel
- hand lens