



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY

0610/53

Paper 5 Practical Test

May/June 2015

CONFIDENTIAL INSTRUCTIONS

Great care should be taken to ensure that any confidential information given does not reach the candidates either directly or indirectly.



If you have any problems or queries regarding these Confidential Instructions, please contact CIE
by email Info@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 **6** printed pages and **2** blank pages.



READ THESE INSTRUCTIONS FIRST

These instructions give details of the apparatus 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 Biology teacher to test the apparatus appropriately. **Testing must be done out of sight of all candidates. No access to the question paper is permitted in advance of the examination.** Centres are reminded that candidates are expected to follow the instructions on the question paper and record all their results. They will not be penalised if these results are not what they expect.

The Supervisor should make sure the Supervisor's Report is fully completed and a copy is enclosed with each packet of scripts.

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 on 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

H = harmful or irritating substance

T = toxic substance

F = highly flammable substance

O = oxidising substance

N = harmful to the environment

Centres are reminded that they are **not** permitted to open the Question Paper envelopes before the examination.

If there are any difficulties with any aspect of setting up this practical examination that the Centre is not able to resolve, it is essential for Centres to contact the Product Manager as soon as possible by **e-mail** to info@cie.org.uk, by **fax** to +44 1223 553558 or by **phone** to +44 1223 553554.

Question 1

Each candidate should be provided with:

- (i) three solutions made up to represent samples of 'urine'

These solutions should be presented to candidates in three small containers; labelled **A**, **B** and **C**.

These should be made up as follows:

- solution in container **A**

approximately 20 cm³ of distilled water with one very small drop of yellow food colouring/dye to create a pale yellow solution representative of urine
- solution in container **B**

approximately 20 cm³ of 1% glucose solution plus one very small drop of yellow food colouring (as **A**)
- solution in container **C**

approximately 10 cm³ of 1% glucose solution plus 10 cm³ of 5% albumen suspension plus one very small drop of yellow food colouring (as **A** and **B**).

The 1% glucose solution is made up with 1 g of anhydrous glucose powder dissolved in 100 cm³ of distilled water. Stir.

The 5% albumen suspension is made by adding 5 g of powdered albumen to 100 cm³ of warm distilled water. Stir.

- (ii) Benedict's solution in dispensing bottles, labelled **Benedict's solution**
- (iii) biuret reagent in dispensing bottles, labelled **biuret reagent**
- (iv) six test-tubes, standing in a large transparent container, e.g. beaker or test-tube rack
- (v) three dropping pipettes
- (vi) one large beaker to be used as a water-bath
- (vii) a supply of hot water at 80 °C
Candidates will raise their hands to indicate when they are ready for the hot water.
- (viii) means of labelling test-tubes, e.g. water-proof marker pen or adhesive labels
- (ix) access to paper towels (in case of spillages)
- (x) eye protection

Question 2

Each candidate should be provided with:

- (i) half a flower

A flower should be cut vertically into two halves. One half should be presented to each candidate on a white tile labelled **F**, covered in plastic film so that it does not dry out.

The flower needs to have a regular shape and have separate male and female parts. These need to be easy to see and identify.

Suitable examples include members of the families *Rosaceae*, *Ranunculaceae*, *Liliaceae* and *Cruciferae*.

- (ii) one ruler (with mm scale)

- (iii) one hand lens (at least x6 magnification)

The Supervisor (**not** the Invigilator) is expected to carry out the practical aspects of **Question 1** and record their results in the space provided in the Supervisor's Report. This must be done during the examination, using the same apparatus and reagents as the candidates but **out of sight** of the candidates.

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This form should be completed and returned to CIE with the scripts.

SUPERVISOR'S REPORT ON PRACTICAL BIOLOGY

The Supervisor should provide the following information.

- 1** Was any difficulty experienced in providing the necessary materials? If so, give brief details.

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- 2** Give details of any difficulties experienced by particular candidates, giving names and candidate numbers. Reference should be made to:

(a) difficulties with specimens or materials;

.....

(b) accidents to apparatus or materials;

.....

(c) assistance provided in case of colour blindness;

.....

(d) any other information that is likely to assist the Examiner, especially if this cannot be discovered from the scripts.

.....

Other cases of individual hardship, e.g. illness or disability, should be reported direct to CIE on the normal 'Special Consideration Form' as detailed in the Handbook for Centres.

- 3** During the examination, the Supervisor should, **out of sight of the candidates**, carry out the practical aspects of **Question 1**, using the same apparatus and reagents as the candidates. Results should be recorded in the space on page **8** (**not** on a spare Question Paper). Attach extra sheets if necessary.

The Invigilator should **not** carry out any of the practical work.

Please attach a photograph (or outline drawing) of a typical flower given to candidates for **Question 2**.

- 4 A plan of work benches, giving details of the candidate numbers of the places occupied by the candidate for each session must be enclosed with the scripts.

Declaration (to be signed by the Principal or the Examinations Officer)

The preparation of this practical has been carried out so as to maintain fully the security of the examination.

Signed

Name (in block capitals)

Centre number

Centre name

If scripts are required to be despatched in more than one packet, it is essential that a copy of the Supervisor's Report and the appropriate seating plan(s) are inside **each packet**.

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