

BIOLOGY

0610/52

Paper 5 Practical Test

February/March 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 on the question 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 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

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) two large test-tubes, label one **A** and the other **B**, supported in a beaker
- (ii) one syringe to measure 10 cm^3 [without a needle]
- (iii) 50 cm^3 of active yeast culture to be presented in a container, labelled **yeast culture**

This should be freshly prepared in bulk, no more than one hour before the examination is due to start, by adding 50 g of new, fast acting, dried yeast to 500 cm^3 cooled, boiled distilled water, containing 50 g of glucose. Keep in a warm environment of about 40°C . This is sufficient to supply 10 candidates.

- (iv) implement for stirring the yeast culture e.g. wooden spill or plastic spoon
- (v) two sets of apparatus as shown in Fig. 1.1, bungs must make an air-tight seal with large test-tubes **A** and **B**.

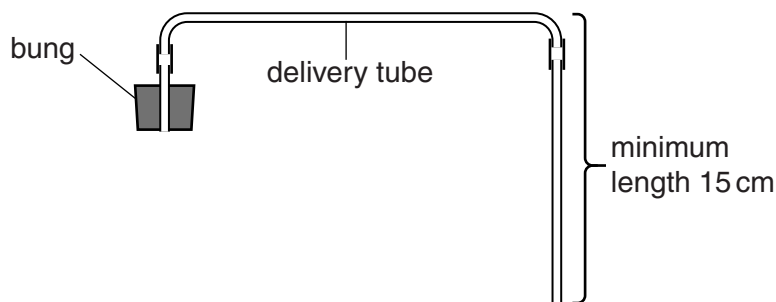


Fig. 1.1

- (vi) approximately 5 cm^3 vegetable oil, labelled **oil**
- (vii) one dropping pipette
- (viii) two test-tubes, in a beaker, each containing 10 cm^3 hydrogencarbonate indicator solution covered by plastic film, labelled **hydrogencarbonate indicator solution**

The hydrogencarbonate indicator solution needs to be freshly prepared on the day of the examination and to be presented in the red state.

Prepare the hydrogencarbonate indicator solution by dissolving 0.84 g sodium hydrogencarbonate in 500 cm^3 distilled water, and then make up to the final volume (1 dm^3) with distilled water. Add this to a solution of 0.1 g cresol-red and 0.2 g thymol-blue, dissolved in 2 cm^3 ethanol.

Add just enough dilute sodium hydrogencarbonate solution to make the solution red rather than orange.

- (ix) two beakers to support the test-tubes containing hydrogencarbonate indicator solution
- (x) one beaker of warm water approximately 45 °C at the start of the examination
- (xi) paper towels (in case of spillages)
- (xii) view of a clock or timer
- (xiii) eye protection

Question 2

Each candidate should be provided with:

- (i) fresh strawberry fruit cut vertically into two equal pieces, each candidate requires only **one** piece

The calyx (green leaf-like structure) should be left intact. To be presented on a white tile and covered in plastic film.
- (ii) one hand lens (at least $\times 6$ magnification)
- (iii) one knife (to cut fruit into smaller pieces)
- (iv) eye protection (as in question 1)
- (v) two large test-tubes, each supported in a beaker or other suitable container
- (vi) food test reagents – biuret, Benedict’s and iodine in potassium iodide solution – to be presented in the usual way with means of dispensing
- (vii) hot water at a temperature of at least 80 °C

Candidates have been instructed to raise their hands when they need hot water.

The Supervisor (**not** the Invigilator) is expected to carry out the practical aspects of **Question 1** and **Question 2** 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.

5
BLANK PAGE



This form should be completed and returned to the Examiner 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.

.....

.....

.....

- 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 Cambridge 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** and **Question 2**, 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 **Question 1** or **Question 2**.



Please record the room temperature.

- 4 A plan of work benches, giving details of the candidate numbers of the places occupied by the candidates 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 examination 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 dispatched 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**.

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.