



Cambridge International Examinations
Cambridge Ordinary Level

BIOLOGY

5090/31

Paper 3 Practical Test

May/June 2017

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.

If you have any queries regarding these Confidential Instructions, please contact Cambridge stating the Centre number, the nature of the query and the syllabus number quoted above.

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phone +44 1223 553554
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This document consists of **6** printed pages and **2** blank pages.

INSTRUCTIONS FOR PREPARING APPARATUS

These Confidential 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.

No access to the Question Paper is permitted in advance of 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.

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**.

Supervisors are advised to remind candidates that **all** substances in the examination should be treated with caution. Pipette fillers and suitable eye protection 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

F flammable

MH moderate hazard

O oxidising

HH health hazard

N hazardous to the aquatic environment

T acutely toxic

Centres are reminded that they are **not** permitted to open the Question Paper envelopes before the examination. There are **no** exceptions to this. Centres should also refer to the Cambridge Handbook.

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 Cambridge as soon as possible by **email** to info@cie.org.uk, by **fax** to +44 1223 553558 or by **phone** to +44 1223 553554.

SUPERVISOR'S INSTRUCTIONS – CONFIDENTIAL

Each candidate to be provided with:

Question 1

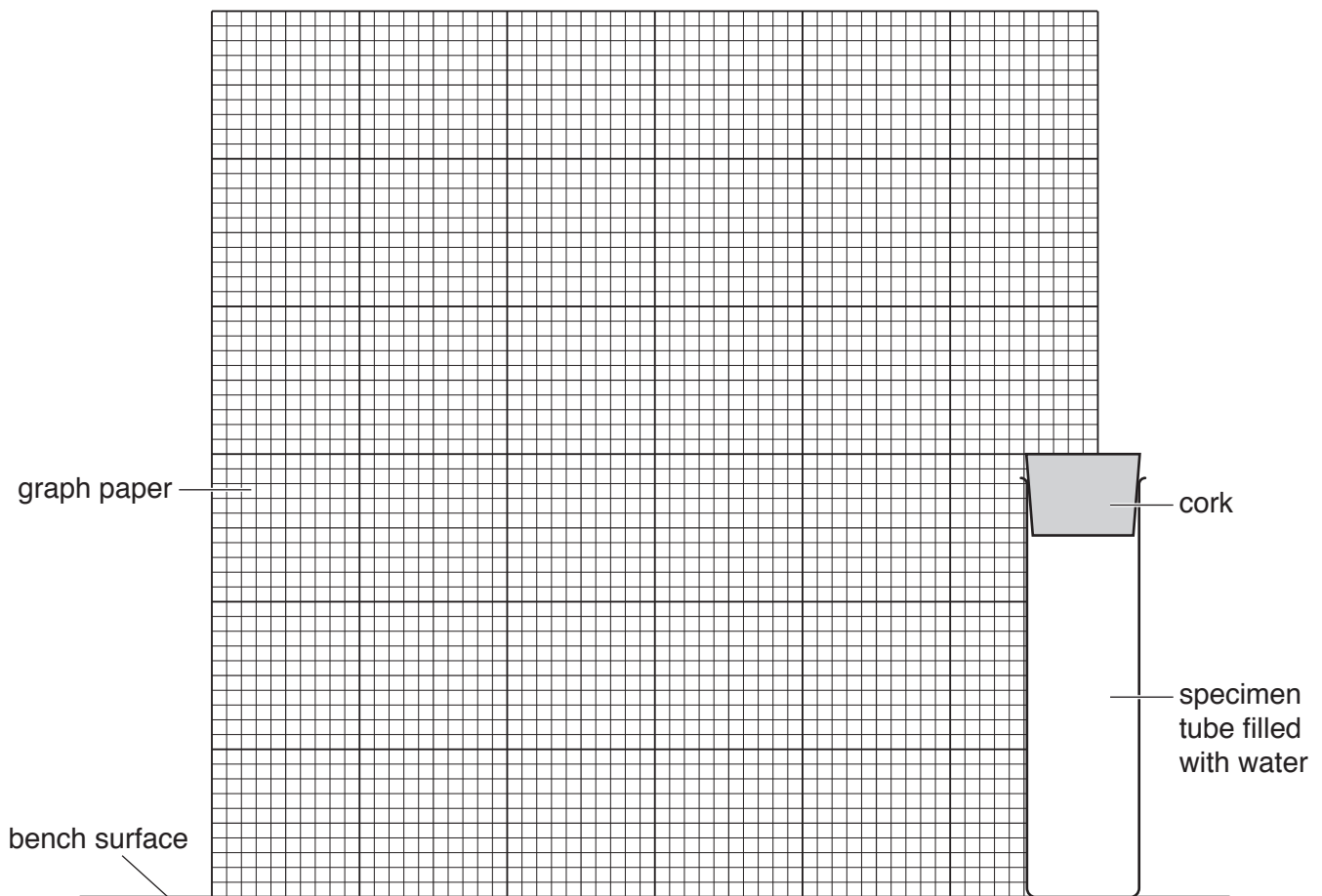
- (i) An Irish potato tuber (*Solanum tuberosum*), large enough to enable each candidate to cut two strips of tissue, each measuring 80 mm × 4 mm × 4 mm. If candidates are provided with part of a large tuber, then any surfaces without skin should be covered in plastic film or similar to prevent dehydration.
- (ii) A ruler.
- (iii) A sharp knife or single-edged razor blade.
- (iv) A white tile or similar.
- (v) Two Petri dishes or similar containers, at least 90 mm in diameter.
- (vi) A marker pen, e.g. chinagraph or similar.
- (vii) About 50 cm³ of each of the following sucrose solutions:
 - 0.2 mol dm⁻³ labelled **S1**
 - 0.8 mol dm⁻³ labelled **S2**

These solutions can be made up using these quantities of sucrose:

0.2 mol dm ⁻³	68 g sucrose per dm ³
0.8 mol dm ⁻³	274 g sucrose per dm ³

- (viii) Two pins, 2 to 3 cm long.

- (ix) A flat-bottomed specimen tube approximately 6 cm high and 2 cm in diameter, standing upright. The tube should be filled with water and firmly corked. Attach a piece of graph paper, 12 cm × 12 cm, to the tube using adhesive tape, as shown below.



- (x) Paper towels.
- (xi) View of a clock or timer.
- (xii) Forceps to remove potato strips from sucrose solution.

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This form should be completed and sent to Cambridge with the scripts.

SUPERVISOR'S REPORT

Cambridge Ordinary Level

May/June 2017

The Supervisor or teacher responsible for the subject 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 Cambridge Administrative Guide.

- 3 During the examination, the Supervisor should, **out of sight of the candidates**, carry out **Question 1a** using the same apparatus and reagents as the candidates. These results should be written in the Supervisor's Report which should be enclosed with the candidates' scripts. If the scripts are in several packets, please ensure that a copy of the Supervisor's Report is enclosed with each packet of scripts.

- 4 Enclose a seating plan of work benches with the scripts, giving details of the candidate numbers for the places occupied by the candidates for each session.

Temperature of examination room°C

Results for **Question 1(a)**:

Declaration (to be signed by the Supervisor)

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 by Cambridge to be despatched in more than one envelope, it is essential that a copy of the relevant Supervisor's report and the appropriate seating plan(s) are sent inside **each envelope**.