



# Cambridge O Level

---

**BIOLOGY**

**5090/32**

Paper 3 Practical Test

**October/November 2020**

CONFIDENTIAL INSTRUCTIONS



**This document gives details of how to prepare for and administer the practical exam.**

**The information in this document and the identity of any materials supplied by Cambridge International are confidential and must NOT reach candidates either directly or indirectly.**

**The supervisor must complete the report at the end of this document and return it with the scripts.**

---

**INSTRUCTIONS**

- If you have any queries regarding these confidential instructions, contact Cambridge International stating the centre number, the syllabus and component number and the nature of the query.  
email [info@cambridgeinternational.org](mailto:info@cambridgeinternational.org)  
phone +44 1223 553554

---

This document has **8** pages. Blank pages are indicated.

## General information about practical exams

Centres must follow the guidance on science practical exams given in the *Cambridge Handbook*.

### Safety

Supervisors must follow national and local regulations relating to safety and first aid.

Only those procedures described in the question paper should be attempted.

Supervisors must inform candidates that materials and apparatus used in the exam should be treated with caution. Suitable eye protection should be used where necessary.

The following hazard codes are used in these confidential instructions, where relevant:

|           |                                      |           |                 |
|-----------|--------------------------------------|-----------|-----------------|
| <b>C</b>  | corrosive                            | <b>MH</b> | moderate hazard |
| <b>HH</b> | health hazard                        | <b>T</b>  | acutely toxic   |
| <b>F</b>  | flammable                            | <b>O</b>  | oxidising       |
| <b>N</b>  | hazardous to the aquatic environment |           |                 |

Hazard data sheets relating to substances used in this exam should be available from your chemical supplier.

### Before the exam

- The packets containing the question papers must **not** be opened before the exam.
- It is assumed that standard school laboratory facilities, as indicated in the *Guide to Planning Practical Science*, will be available.
- Spare materials and apparatus for the tasks set must be available for candidates, if required.

### During the exam

- It must be made clear to candidates at the start of the exam that they may request spare materials and apparatus for the tasks set.
- Where specified, the supervisor **must** perform the experiments and record the results as instructed. This must be done **out of sight** of the candidates, using the same materials and apparatus as the candidates.
- Any assistance provided to candidates must be recorded in the supervisor's report.
- If any materials or apparatus need to be replaced, for example, in the event of breakage or loss, this must be recorded in the supervisor's report.

### After the exam

- The supervisor must complete a report for each practical session held and each laboratory used.
- Each packet of scripts returned to Cambridge International must contain the following items:
  - the scripts of the candidates specified on the bar code label provided
  - the supervisor's results relevant to these candidates
  - the supervisor's reports relevant to these candidates
  - seating plans for each practical session, referring to each candidate by candidate number
  - the attendance register.

## Specific information for this practical exam

During the exam, the supervisor (NOT the invigilator) must do the experiments in Questions 1 and 2 and record the results on a spare copy of the question paper, clearly labelled 'supervisor's results'.

### Apparatus and chemicals for Question 1

Each candidate will require the following materials and apparatus:

- (i) approximately 15–20 cress seedlings grown in the dark, provided in a suitable container, and labelled **dark**
- (ii) approximately 15–20 cress seedlings grown in the light, provided in a suitable container, and labelled **light**

The cress seeds can be grown on several layers of moist paper towel or cotton wool in a large container. They can then be transferred into separate containers for each candidate.

All the seeds should be germinated in the dark for approximately 24 hours (until germination has just started). Half of these seedlings should then be grown in the dark and the other half in normal light conditions until the seedlings in the light are about 10–20 mm tall. This will take 4–7 days depending on temperature. Water will need to be supplied to the seedlings as necessary to keep the substrate damp but not overwatered.

Seedlings grown in the dark should be taken out of the dark just before the examination.

If cress seeds are not available, mustard or radish seeds are suitable alternatives.

- (iii) forceps
- (iv) hand lens
- (v) ruler (mm)
- (vi) white tile or other similar surface
- (vii) paper towels.

**Apparatus and chemicals for Question 2**

Each candidate will require the following materials and apparatus:

- (i) 100 cm<sup>3</sup> beaker with a transparent base
- (ii) wax pencil or other means of writing on the beaker
- (iii) 25 cm<sup>3</sup> measuring cylinder
- (iv) approximately 50 cm<sup>3</sup> of 1% powdered milk solution in a small beaker or similar container labelled **milk**

Dried skimmed milk powder which contains approximately 35% protein works best. Make up the required solution by dissolving 1 g of dried skimmed milk in 100 cm<sup>3</sup> of distilled water.

- [MH] (v)** approximately 10 cm<sup>3</sup> of 0.1 M hydrochloric acid in a small beaker or suitable container and labelled **dilute HCl**
- (vi) dropper or teat pipette
- (vii) white tile or other similar surface
- (viii) safety spectacles or goggles.



**BLANK PAGE**

---

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 Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at [www.cambridgeinternational.org](http://www.cambridgeinternational.org) after the live examination series.

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

**Supervisor's report**

Syllabus and component number

|  |  |  |  |   |  |  |
|--|--|--|--|---|--|--|
|  |  |  |  | / |  |  |
|--|--|--|--|---|--|--|

Centre number

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|--|--|--|--|--|

Centre name .....

Time of the practical session .....

Laboratory name/number .....

**Give details of any difficulties experienced by the centre or by candidates (include the relevant candidate names and candidate numbers).**

You must include:

- any difficulties experienced by the centre in the preparation of materials
- any difficulties experienced by candidates, e.g. due to faulty materials or apparatus
- any specific assistance given to candidates.

### Declaration

- 1 Each packet that I am returning to Cambridge International contains the following items:
  - the scripts of the candidates specified on the bar code label provided
  - the supervisor's results relevant to these candidates
  - the supervisor's reports relevant to these candidates
  - seating plans for each practical session, referring to each candidate by candidate number
  - the attendance register.
- 2 Where the practical exam has taken place in more than one practical session, I have clearly labelled the supervisor's results, supervisor's reports and seating plans with the time and laboratory name/number for each practical session.
- 3 I have included details of difficulties relating to each practical session experienced by the centre or by candidates.
- 4 I have reported any other adverse circumstances affecting candidates, e.g. illness, bereavement or temporary injury, directly to Cambridge International on a *special consideration form*.

Signed ..... (supervisor)

Name (in block capitals) .....