



Cambridge IGCSE™

BIOLOGY

0610/52

Paper 5 Practical Test

May/June 2024

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
phone +44 1223 553554

This document has **8** pages. Any 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:

C	corrosive	MH	moderate hazard
HH	health hazard	T	acutely toxic
F	flammable	O	oxidising
N	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 experiment in Question 1 and record the results on a spare copy of the question paper, clearly labelled “supervisor’s results”.

Question 1

Each candidate should be provided with:

hazard	materials and apparatus	quantity per candidate
	1.0 mol dm ⁻³ hydrochloric acid solution, in a beaker labelled hydrochloric acid	40 cm ³
	distilled water, in a beaker labelled distilled water	60 cm ³
	test-tubes containing bromothymol blue indicator in agar jelly	3
	empty 100 cm ³ beakers	3
	test-tube rack to hold three test-tubes	1
	10 cm ³ syringe	1
	5 cm ³ syringe	1
	glass rod	1
	empty 250 cm ³ beaker labelled water-bath	1
	supply of warm water at approximately 40 °C Candidates will raise their hand when they require warm water. This should be poured directly into their beaker labelled water-bath .	approximately 150 cm ³
	beaker containing 150 cm ³ of tap water labelled water for washing	1
	thermometer, –10 °C to +110 °C, with 1 °C graduations	1
	250 cm ³ beaker or waterproof container labelled waste	1
	permanent marker pen	1
	stop-clock	1
	paper towels	5
	ruler with a mm scale (also needed for Question 2)	1
	gloves	1 pair
	suitable eye protection	1

Preparation of materials

test-tubes containing bromothymol blue in agar jelly

0.1% bromothymol blue:

Add 0.1 g bromothymol blue **[low hazard]** to 1.6 cm^3 of 0.1 mol dm^{-3} sodium hydroxide and mix with a glass rod. Make up to 100 cm^3 with distilled water.

3% agar:

- Add 9g of technical (non-nutrient) agar to 285 cm^3 distilled water and mix well.
- Heat the solution to boiling point and then continue to heat until the agar has fully dissolved and the solution is no longer cloudy.
- While still hot, add 15 cm^3 of 0.1% bromothymol blue solution and mix well.
- If necessary, add 0.1 mol dm^{-3} of sodium hydroxide in 1 cm^3 increments until the agar has a blue colour.
- Pour 5 cm^3 of the blue agar into clean standard (small) test-tubes and allow to set. (Standard or small test-tubes are approximately $125\text{ mm} \times 15\text{ mm}$.)

The test-tubes containing bromothymol blue in agar jelly must be prepared the day before the exam and stored in a cool dry place.

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Supervisor's report

Syllabus and component number

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Centre number

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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 all of 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)