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Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/52**

Paper 5 Practical Test **October/November 2024**

CONFIDENTIAL INSTRUCTIONS

6710343833

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.

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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.

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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
	spinach leaves or equivalent	8
	mortar and pestle (If unavailable a heavyweight ceramic bowl and a metal teaspoon can be used.)	1
	cold isolation medium in a 100 cm^3 beaker labelled **isolation medium**	50 cm^3
	small funnel	1
	bench lamp with a 60 watt or equivalent bulb	1
	standard test-tubes (approximately 125 mm × 15 mm)	2
	test-tube rack to hold standard test-tubes	1
	a supply of ice-cold water to be distributed to candidates when they raise their hand (This can either be made using ice and water or by keeping the water in the refrigerator prior to the practical.)	50 cm^3
	permanent marker pen	1
	stop-clock	1
	1 cm^3 syringe	1
	5 cm^3 syringe	1
	20 cm × 20 cm pieces of muslin (If larger funnels are used, then bigger muslin may be required. Check that the muslin is sufficiently large to reach the edges of the funnel.)	3
[HH], **[MH]**, **[N]**	DCPIP in a 100 cm^3 beaker labelled **DCPIP**	50 cm^3
	empty 100 cm^3 beaker labelled **water-bath**	1
	empty 250 cm^3 beaker labelled **chloroplast suspension**	1
	paper towels	5
	gloves	1 pair
	suitable eye protection	1
	container labelled **waste** that is large enough to hold the funnel	1
	30 cm ruler with a mm scale (also needed for Question 2)	1

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Preparation of materials

Phosphate buffer solution

Dissolve 4.48 g of hydrated disodium hydrogen phosphate ($Na_2HPO_4 \cdot 12H_2O$) and 1.7 g of potassium dihydrogen phosphate (KH_2PO_4) in 500 cm^3 of distilled water. Keep refrigerated until required.

Isolation medium

Dissolve 68.46 g of sucrose and 0.38 g of potassium chloride (KC*l*) in phosphate buffer solution and make up to 500 cm^3 with phosphate buffer solution. Keep refrigerated until just before the exam.

DCPIP solution **[HH]**, **[MH]**, **[N]**

Dissolve 0.01 g of DCPIP and 0.93 g of KC*l* in phosphate buffer solution and make up to 500 cm^3 with phosphate buffer solution. Keep refrigerated until required.

Spinach leaves

Common spinach (*Spinacia oleracea*) leaves are suitable and should be fresh. If fresh spinach is not available an equivalent quantity of fresh green lettuce (such as iceberg) or cabbage leaves can be used as a substitute. Ensure that the substituted leaves are of approximately the same total size as eight spinach leaves.

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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.

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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) .....

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