



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE
NAME

CENTRE
NUMBER

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CANDIDATE
NUMBER

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AGRICULTURE

5038/03

Paper 3 Practical Test

October/November 2009

1 hour 15 minutes

Candidates answer on the Question Paper.

Additional Materials: As listed in Confidential Instructions.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams or graphs.

Do not use staples, paper clips, highlighters, glue or correction fluid.

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

For Examiner's Use

1

2

3

Total

This document consists of **8** printed pages, **3** blank pages and **1** Supervisor's Report.



1 **AS1** is a flower.

(a) (i) Remove from the flower:

- a sepal;
- a petal;
- stamen (the anther and filament together).

Keep the parts as whole as possible.
Draw and label the parts removed.

3

- (ii) Cut the ovary, style and stigma in half lengthwise.
Draw and label the ovule, the stigma and the style.

[3]

AS1 is a plant pollinated by insects.

- (iii) State **two** ways that the flower, **AS1**, is adapted for insect pollination.

.....

.....

.....

[2]

4

(b) **AS2** is a complete flowering plant.

(i) Draw the plant and label **three** different parts.

[3]

AS2 is a plant pollinated by wind.

(ii) How is the flower in **AS2** adapted for wind pollination?

.....

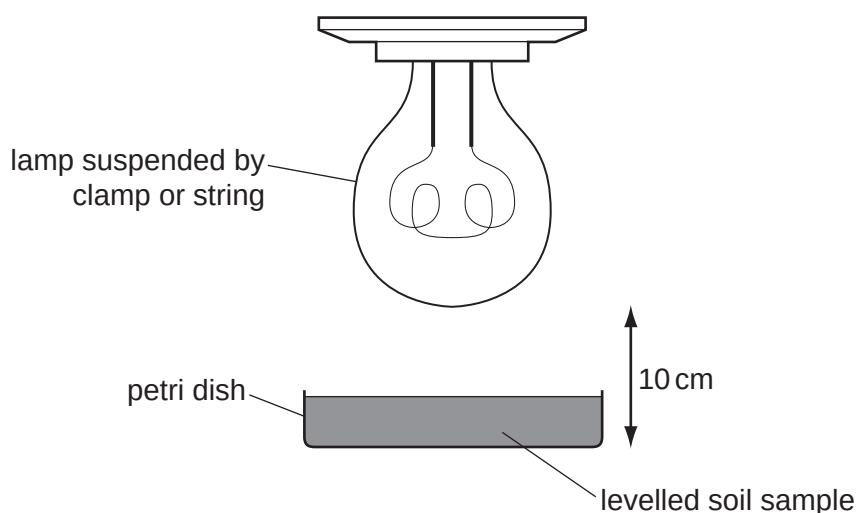
.....

.....

[2]

[Total: 14]

- 2 You are to investigate the effect of heat radiation on **two** soil samples, **AS3** and **AS4**. The diagram below shows how this is to be done.



- Place a sample of **AS3** in a petri dish and level the soil to a depth of about 1 cm.
- Take the temperature of **AS3** by placing the thermometer/probe in the soil.
- Record the temperature in Table 2.1.
- Switch on the power supply to the lamp.
- Take the temperature of **AS3** each minute for 5 minutes.
- Record these temperatures in Table 2.1.
- Repeat the procedure using **AS4**.

Table 2.1

(i)

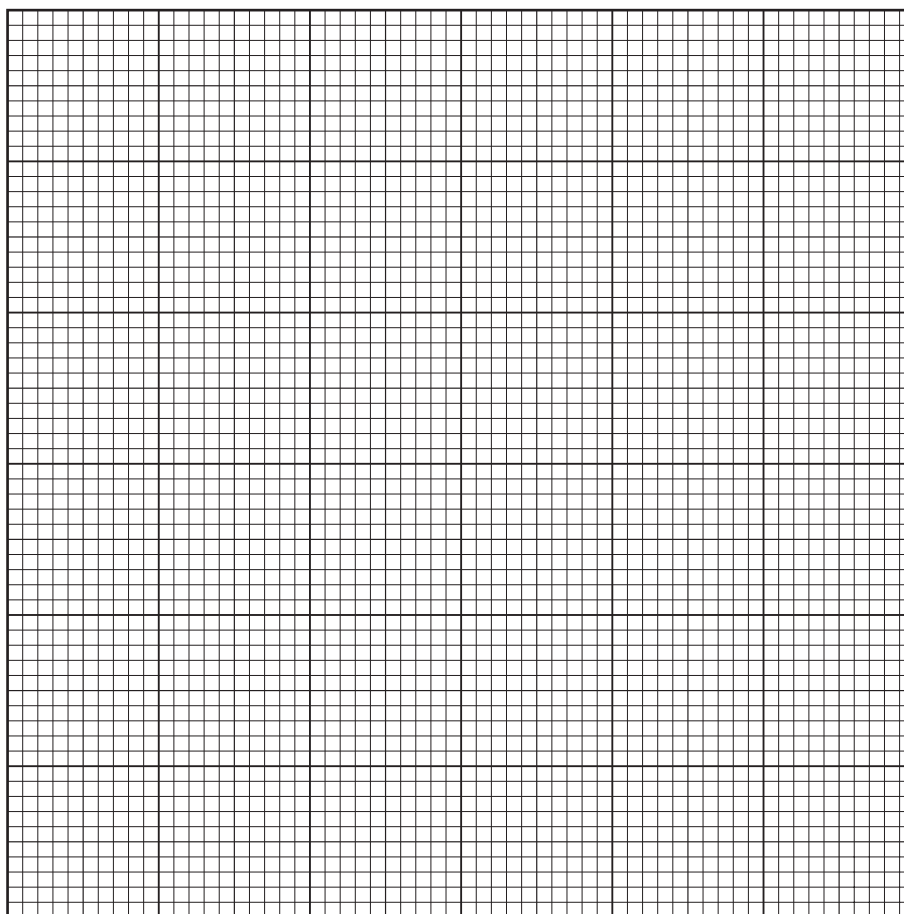
time/min	temperature of AS3 / °C	temperature of AS4 / °C
0 (starting temperature)		
1		
2		
3		
4		
5		

[2]

- (ii) Which sample absorbed most heat radiation?

..... [1]

- (iii) On the graph paper below plot the results to show the changes in temperature of **AS3** and **AS4**.



[4]

- (iv) Explain why the thermometer/probe is placed in the soil rather than on the surface.

.....

.....

.....

.....

[1]

- (v) Explain why the soil samples should have been air dried before the experiment.

.....

.....

.....

..... [1]

- (vi) Suggest **one** other way that the results of this experiment could be made more reliable.

.....

.....

..... [1]

[Total: 10]

3 **AS5, AS6** and **AS7** are samples of **three** different soils.

- Use a hand lens to carefully examine soil sample **AS5**.
- With moist fingers rub the soil sample between your fingers.
- Repeat the procedure with soil samples **AS6** and **AS7**.

(i) Match the soil samples with the soil description in the table below.

description	soil sample
dark and organic soil	AS
clay soil	AS
course sandy soil	AS

[3]

(ii) Which soil sample

could be easily leached? [1]

readily absorbs energy from the sun? [1]

would be improved with the addition of lime to flocculate the soil?

..... [1]

[Total: 6]

SUPERVISOR'S REPORT

**The supervisor or teacher responsible for the subject is asked to answer the following questions.*

1 Name the flower used for **AS1**.

common name

scientific name

Name the flowering plant used for **AS2**.

common name

scientific name

2 Type of lamp provided.

.....

Lamp volts

.....

Lamp watts

.....

Give details of any difficulties encountered for this question.

.....

.....

3 Briefly describe the nature of the soils

AS5

AS6

AS7

Declaration to be signed by the Principal, and completed on the top script from the Centre.

The preparation of the Practical Test has been carried out so as to fully maintain the security of the examination.

Signed

Centre Number School

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