



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE
NAME

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CENTRE
NUMBER

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CANDIDATE
NUMBER

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AGRICULTURE

5038/03

Paper 3 Practical Test

May/June 2007

1 hour 15 minutes

Candidates answer on the Question Paper.

Additional Materials: As listed in Instructions to Supervisors

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, graphs or rough working.

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 **7** printed pages and **1** Supervisor's Report.



Answer **all** questions.

Write your answers in the spaces provided.

- 1 (a) You are provided with **two** common weeds labelled **AS1** and **AS2**. For each weed make a clear drawing and label **three** parts on each plant.

(i) **AS1**

[4]

(ii) **AS2**

[4]

- (iii) Briefly describe **one** feature of each plant **AS1** and **AS2** that make it a successful weed. Explain how this feature makes the plant successful.

AS1

Feature

Reason

..... [1]

AS2

Feature

Reason

..... [1]

- (iv) Weeds can be controlled using herbicide. Give **one** other method of effective weed control.

AS1 [1]

AS2 [1]

[Total: 12]

2 The table below shows wet tests and results for the presence of ions.

Ion	Test	Test result
Ammonium	Add sodium hydroxide solution, warm carefully.	Ammonia produced on warming turning damp red litmus paper blue.
Calcium	Add sodium hydroxide solution.	White precipitate, insoluble in excess.
Carbonate	Add dilute acid.	Fizzing, carbon dioxide produced, which turns limewater milky.
Nitrate	Add sodium hydroxide solution then aluminium foil, warm carefully.	Ammonia produced on warming turning damp red litmus paper blue.
Sulphate	Acidify with dilute hydrochloric acid, then add barium nitrate solution.	White precipitate.

Two bags of fertiliser have lost their labels. **AS3** and **AS4** are samples of the fertilisers. Carry out the following tests on **AS3** and **AS4**.

Test 1

- place a small amount of **AS3** into a clean, dry test-tube
- label test-tube **AS3**
- add 4 cm depth of sodium hydroxide solution to the test-tube
- record your result and conclusion in the table below
- repeat the test with **AS4**

(i)

	Result	Conclusion
AS3		
AS4		

[4]

Test 2

- place a small amount of **AS3** into a clean, dry test-tube
- label the test-tube
- add 3cm depth of dilute hydrochloric acid to the test-tube
- test any gas produced with limewater
- record your result and conclusion in the table below
- repeat the test with **AS4**

(ii)

	Result	Conclusion
AS3		
AS4		

[4]

[Total: 8]

- 3 (a) Two 20g samples, **AS5** and **AS6**, were taken from different soils. These were left to dry for 24 hours in open polythene bags.

Weigh each sample with the polythene bag and record the weight in the table below.

Find the percentage of water in each of the samples by recording the weight lost.

	Start weight	Weight after drying the sample	Percentage of water in the sample
AS5	20g		
AS6	20g		

[4]

Do not attempt this part of the test until you have completed part (a)

- (b) Now test each sample to find their pH.

- place 1 cm depth of **AS5** into a test-tube
- add 1 spatula of barium sulphate
- mark on the test-tube a line level with the top of the barium sulphate
- add distilled water to 2cm above the marked line and make another mark
- add 2cm depth of soil indicator
- carefully shake the test-tube and leave it to settle

Repeat this test for **AS6**.

- (i) Why is distilled water used rather than tap water?

.....
 [1]

- (ii) Record the colour of your tubes for **AS5** and **AS6** in the table below.

Use a pH colour chart to work out the pH of **AS5** and **AS6** and record them in the table below.

Sample	AS5	AS6
Colour of solution after settling		
pH of sample		

[4]

- (iii) A soil was found to have a pH of 4.0. What could be done to raise the pH of the soil?

.....

.....

..... [1]

[Total: 10]

SUPERVISOR'S REPORT

**The Supervisor or Teacher responsible for the subject is asked to answer the following questions.*

1 Was any difficulty experienced in providing the specimens?

Names of Species **AS1**

Common name

Latin name

Names of Species **AS2**

Common name

Latin name

2 Was any difficulty experienced with the specimens?

Were there any problems with the apparatus or equipment?

3 What was the pH of the soils provided?

AS5

AS6

What type of balance was used?

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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