Name

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## CAMBRIDGE INTERNATIONAL EXAMINATIONS General Certificate of Education Ordinary Level

## **AGRICULTURE**

5038/03

Paper 3 Practical Test

October/November 2003

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 in the spaces provided on the Question Paper. You may use a soft pencil for any diagrams, graphs or rough working. Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer all questions.

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

If you have been given a label, look at the details. If any details are incorrect or missing, please fill in your correct details in the space given at the top of this page.

Stick your personal label here, if provided.

For Exam	iner's Use
1	
2	
3	
Total	

#### Answer all the questions.

Write your answers in the spaces provided.

**AS1** has been taken from a broad leaved plant (dicotyledon). 1

www.PapaCambridge.com AS2 has been taken from a grass plant (monocotyledon). Cobalt chloride paper is a test for the presence of water. It changes from blue to pink when made damp by water vapour leaving stomata.

- Using forceps, dry two squares of cobalt chloride paper over a Bunsen burner flame so that the squares are pale blue. Do **not** allow the paper to burn.
- Stick one square of the cobalt chloride paper to the upper surface of AS1 and one square to the lower surface using transparent sticky tape, as shown in Fig. 1.1.
- Leave **AS1** for 15 minutes and continue with the rest of the question.

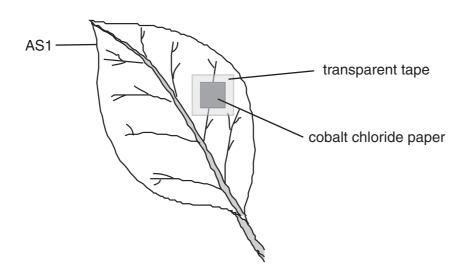


Fig. 1.1

(a)	List two differences you can see between the upper and lower surfaces of AS1.		
	1		
	2	[2]	

- Using forceps, dry two more squares of cobalt chloride paper over a Bunsen flame so that the squares are pale blue.
- Stick each square of the cobalt chloride paper on to the centre of a square transparent sticky tape.
- www.papaCambridge.com Place AS2 between the two squares of cobalt chloride paper so that it is held in place by the sticky tape, as shown in Fig. 1.2. One piece of cobalt chloride paper should be stuck to each side of the leaf.
- Leave **AS2** for 15 minutes and continue with the remaining questions.

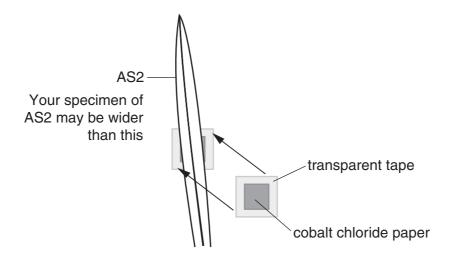


Fig. 1.2

(b) Complete Table 1.1 with your results.

Table 1.1

	colour of cobalt chloride paper after 15 minutes
AS1 upper surface	
AS1 lower surface	
AS2 first surface	
AS2 second surface	

(c)	(i)	What do your results tell you about the surfaces of <b>AS1</b> ?	For Examiner's Use
	(ii)		Tidge.com
(d)	Und	der which weather conditions would the rate of water loss from leaves be greatest?	
		[2]	

For Examiner's

2 AS3 and AS4 are samples of water taken from two different rivers next to two fields the fields has been fertilised recently with ammonium sulphate fertiliser.

Use the tests in Table 2.1 to discover which of the samples, AS3 or AS4, contains ammonium sulphate.

Table 2.1

ion	test	test result
carbonate	add dilute hydrochloric acid	fizzing, carbon dioxide produced
nitrate	add sodium hydroxide solution then aluminium foil; warm very carefully (do not allow to boil)	ammonia produced
sulphate	add dilute hydrochloric acid then add barium chloride solution	white precipitate
calcium	add sodium hydroxide solution	white precipitate
ammonium	add sodium hydroxide solution; gently warm (do not allow to boil)	ammonia produced

(a)

(i)	Describe how you performed the tests on the samples.
	[3]
(ii)	How did you make sure that the experiments were fair tests?
	[2]

## Table 2.2

<b>(b)</b> Co	6 omplete Table 2.2 with your results. Table 2.2	For Examiner's Use	
sample	presence of ammonium ions in sample	presence of sulphate ions in sample	OM
AS3			

[4	
(i) Suggest how the ammonium sulphate entered the river.	(c) (i)
[2	
(ii) Suggest one method of reducing the amount of ammonium sulphate in this river.	(ii)
[1	
[Total : 12	

3 You are provided with the receipts for the costs and returns for UCLES school September 2003.

## UCLES School Farm Sales

4 September 2003

300 eggs

\$18.00

# UCLES School Farm Sales

30 September 2003

0.1 tonne farmyard manure

\$11.00

### Boxmakers Ltd.

2 September 2003

250 Egg trays

\$17.00

## UCLES School Farm Sales

11 September 2003

200 eggs

\$14.00

## Poultry Feed Co.

1 September 2003

Animal feed

\$8.00

### **UCLES School Farm**

14 September 2003

Labour costs

\$21.00

## UCLES School Farm Sales

28 September 2003

500 eggs

\$38.00

### Poultry Feed Co.

15 September 2003

Animal feed

\$10.00

### **UCLES School Farm**

28 September 2003

Labour costs

\$21.00

www.PanaCambridge.com (a) Use these data to present the financial record for UCLES farm for the month 2003 in the space below.

Suggest reasons for the differences in the price of eggs during September 2003.	(b)
[2]	
[Total : 6]	

[4]

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### **SUPERVISOR'S REPORT**

\*The Supervisor or Teacher responsible for the subject is asked to answer the following question

	•	
1	Was	s any difficulty experienced in providing the necessary materials? Give brief details.
2		the candidate experience any difficulty during the course of the examination? If so, give brief ails. Reference should be made to
	(a)	difficulties arising from faulty specimens;
	(b)	accidents to apparatus or materials;
	(c)	the identity of the specimens AS1 and AS2 supplied to the candidates;
	(d)	any information that is likely to assist the Examiner, especially if this cannot be discovered from the scripts.
Dec	larat	tion to be signed by the Principal, and completed on the top script from the Centre.
		paration of the Practical Test has been carried out so as to fully maintain the security of the tion.
Sigr	ned	
Cen	tre N	Number School

<sup>\*</sup>Information that applies to all candidates need only be given once.