Centre Number	Candidate Number	Name		
C. (AMBRIDGE INTER General Certificate (NATIONAL EXAMINATION	NS el	
AGRICULTUR	E		5038/03	3
Paper 3 Practi	cal Test			
		October/N	lovember 200	3
Candidates answe Additional Materia	er on the Question Pap Is: As listed in Instruction	1 hc er. ons to Supervisors	our 15 minute	S
READ THESE INSTRUC	TIONS FIRST			
Write your Centre Numbe Write in dark blue or black You may use a soft pencil Do not use staples, paper	r, Candidate Number and topen in the spaces pro- for any diagrams, grap clips, highlighters, glue	nd Name on all the work you ha vided on the Question Paper. ohs or rough working. e or correction fluid.	nd in.	
Answer all questions. The number of marks is g	iven in brackets [] at th	ne end of each question or part	question.	
If you have been given a l	abel, look at the		For Examine	er's Use
details. If any details are in missing, please fill in your	ncorrect or correct details		1	
in the space given at the t	op of this page.		2	
Stick your personal label h provided.	nere, if		3	
			Total	
This document	consists of 8 printed p	ages.a Supervisor's Report and	3 blank pages	

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Answer **all** the questions.

Write your answers in the spaces provided.

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

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.

- Using forceps, dry two more squares of cobalt chloride paper over a Bunsen burner flame so that the squares are pale blue.
- Stick each square of the cobalt chloride paper on to the centre of a square of transparent sticky tape.
- 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.





(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		

[4]

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(c)	(i)	What do your results tell you about the surfaces of AS1 ?
		[2]
	(ii)	What do your results tell you about the surfaces of AS2 ?
		[2]
(d)	Und	der which weather conditions would the rate of water loss from leaves be greatest?
		[2]
		[2]
		[Total : 12]

2 AS3 and AS4 are samples of water taken from two different rivers next to two fields. One of 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.

5

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.

(ii) How did you make sure that the experiments were fair tests?

(b) Complete Table 2.2 with your results.

Table 2.2

sample	presence of ammonium ions in sample	presence of sulphate ions in sample
AS3		
AS4		

[4]

(c) (i) Suggest how the ammonium sulphate entered the river.

(ii) Suggest one method of reducing the amount of ammonium sulphate in this river. [1] [Total : 12] **3** You are provided with the receipts for the costs and returns for UCLES school farm for September 2003.

UCLES School Farm Sales	UCLES School Farm Sales	UCLES School Farm Sales
4 September 2003	11 September 2003	28 September 2003
300 eggs	200 eggs	500 eggs
\$18.00	\$14.00	\$38.00
UCLES School Farm Sales	Poultry Feed Co.	Poultry Feed Co.
30 September 2003 0.1 tonne	1 September 2003	15 September 2003
farmyard manure	Animal feed	Animal feed
\$11.00	\$8.00	\$10.00
Boxmakers Ltd.	UCLES School Farm	UCLES School Farm
2 September 2003	14 September 2003	28 September 2003
250 Egg trays	Labour costs	Labour costs
\$17.00	\$21.00	\$21.00

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

(b) Suggest reasons for the differences in the price of eggs during September 2003.

.....[2] [Total : 6]

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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 necessary materials? Give brief details.

- 2 Did the candidate experience any difficulty during the course of the examination? If so, give brief details. 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.

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

*Information that applies to all candidates need only be given once.