

# **Additional Applied Science A**

General Certificate of Secondary Education

Unit **A334/01**: Agriculture and Food

## **Mark Scheme for June 2012**

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

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






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## Annotations

Used in the detailed Mark Scheme:

Annotation	Meaning
/	alternative and acceptable answers for the same marking point
(1)	separates marking points
<b>not/reject</b>	answers which are not worthy of credit
<b>ignore</b>	statements which are irrelevant - applies to neutral answers
<b>allow/accept</b>	answers that can be accepted
(words)	words which are not essential to gain credit
words	underlined words must be present in answer to score a mark
ecf	error carried forward
AW/owtte	alternative wording
ORA	or reverse argument

Available in scoris to annotate scripts

	indicate uncertainty or ambiguity
	benefit of doubt
	Contradiction
	incorrect response
	error carried forward
	draw attention to particular part of candidate's response
	draw attention to particular part of candidate's response
	draw attention to particular part of candidate's response
	no benefit of doubt

	Reject
	correct response
	draw attention to particular part of candidate's response
	information omitted

### Subject-specific Marking Instructions

- If a candidate alters his/her response, examiners should accept the alteration.
- Crossed out answers should be considered only if no other response has been made. When marking crossed out responses, accept correct answers which are clear and unambiguous.

E.g.

For a one mark question, where ticks in boxes 3 and 4 are required for the mark:

Put ticks (✓) in the two correct boxes.

<input type="checkbox"/>
<input type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>

This would be worth 1 mark.

Put ticks (✓) in the two correct boxes.

<input type="checkbox"/>
<input type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>

This would be worth 0 marks.

Put ticks (✓) in the two correct boxes.

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>

This would be worth 1 mark.

- c. The list principle:  
 If a list of responses greater than the number requested is given, work through the list from the beginning. Award one mark for each correct response, ignore any neutral response, and deduct one mark for any incorrect response, e.g. one which has an error of science. If the number of incorrect responses is equal to or greater than the number of correct responses, no marks are awarded. A neutral response is correct but irrelevant to the question.

- d. Marking method for tick boxes:

Always check the additional guidance.

If there is a set of boxes, some of which should be ticked and others left empty, then judge the entire set of boxes.

If there is at least one tick, ignore crosses. If there are no ticks, accept clear, unambiguous indications, e.g. shading or crosses.

Credit should be given for each box correctly ticked. If more boxes are ticked than there are correct answers, then deduct one mark for each additional tick. Candidates cannot score less than zero marks.

E.g. If a question requires candidates to identify a city in England, then in the boxes

<b>Edinburgh</b>	
<b>Manchester</b>	
<b>Paris</b>	
<b>Southampton</b>	

the second and fourth boxes should have ticks (or other clear indication of choice) and the first and third should be blank (or have indication of choice crossed out).

<b>Edinburgh</b>			✓			✓	✓	✓	✓	
<b>Manchester</b>	✓	x	✓	✓	✓				✓	
<b>Paris</b>				✓	✓		✓	✓	✓	
<b>Southampton</b>	✓	x		✓		✓	✓		✓	
<b>Score:</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>NR</b>

## MARK SCHEME:

Question		Answer	Mark	Guidance
1	(a)	yeast; sugar	1	both answers required for mark
	(b)	respires; carbon dioxide	2	
	(c)	<b>D</b> ; uses oxygen	2	
	(d) (i)	fungi/ bacteria	1	<b>accept</b> mould <b>reject</b> yeast
	(ii)	<b>any two</b> contaminate/ poison; with waste; feed on it	2	<b>accept</b> makes it not edible; rots <b>ignore</b> references to smell/ colour/taste
	(iii)	chilled in a refrigerator <input type="checkbox"/> in a warm room <input type="checkbox"/> frozen in a deep freezer <input checked="" type="checkbox"/> next to an open window <input type="checkbox"/> on a damp surface <input type="checkbox"/>	1	if more than 1 tick, no marks

Question		Answer	Mark	Guidance
2	(a)	arable <input type="checkbox"/> dairy <input type="checkbox"/> poultry <input type="checkbox"/> horticulture <input checked="" type="checkbox"/>	1	if more than one tick, no marks
	(b)	<b>correct answer (2 marks) D A C (B) E</b>	2	<b>D</b> and <b>E</b> in correct position 1 mark <b>A</b> and <b>C</b> in correct position 1 mark
	(c)	the shop from charging too much for food <input type="checkbox"/> the farmer from charging too much for his crop <input type="checkbox"/> customers getting infected food <input checked="" type="checkbox"/> customers buying food they don't like <input type="checkbox"/>	1	if more than one tick, no marks
	(d)	pollination; fertilisation	2	
	(e) (i)	evidence of dividing by 6; 37	2	correct answer = 2 marks
	(ii)	photosynthesis	1	
	(iii)	mass/weight/ number	1	<b>accept</b> width/circumference/amount

Question		Answer	Mark	Guidance
3	(a)	4; 2	1	both answers required
	(b)	(i) eat bigger variety of plants (than sheep); more people eat goat/ export potential/wider market	2	
		(ii) (sheep) suffer less in high rainfall/ goats suffer more in high rainfall	1	<b>reject</b> easier to keep
	(c)	<b>any three</b> temperature; shelter; food; water; pests; disease/health; age; gender; genetics; space/ exercise	3	<b>ignore</b> vague answers such as location/ weather/ climate <b>ignore</b> predators
	(d)	(i) selection of animals; collection of sperm; check sperm; storage of sperm/ using liquid nitrogen/ frozen sperm inserted ( manually) / inseminate; into vagina/cervix/womb/ uterus; at ovulation	3	any three in correct sequence
		(ii) idea of preparation eg book vet; get goats inside; care for baby; help with birth; idea of importance of timing e.g. avoiding births in bad weather; to coincide with market	1	<b>reject</b> prepare/organise for birth unless qualified



Question		Answer	Mark	Guidance
4	(a)	<p>Nettle plants don't need pesticides or herbicides.</p> <p>Nettle plants are easy to harvest.</p> <p>Nettle fibres can be mixed with wool.</p> <p>Nettle fibres can replace polyester fibres.</p> <p>Nettle plants can sting.</p>	2	if more than two ticks, deduct a mark for each extra tick
	(b)	cotton	1	
	(c)	<p><b>any two</b></p> <p>can use poor land;</p> <p>easy to harvest;</p> <p>don't need pesticides / herbicides</p> <p>grow quickly</p>	2	
	(d)	adds market value/ can charge more/ makes more money	1	<b>accept</b> sell more/ so more people will buy it
		<b>Total</b>	<b>36</b>	

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