

Additional Applied Science A

General Certificate of Secondary Education

Unit **A334/01**: Agriculture and Food (Foundation Tier)

Mark Scheme for January 2013

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of candidates of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, Cambridge Nationals, Cambridge Technicals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support, which keep pace with the changing needs of today's society.

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.









© OCR 2013






Annotations

Used in the detailed Mark Scheme:

Annotation	Meaning
/	alternative and acceptable answers for the same marking point
(1)	separates marking points
not/reject	answers which are not worthy of credit
ignore	statements which are irrelevant – applies to neutral answers
allow/accept	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

Annotation	Meaning
	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

Annotation	Meaning
	no benefit of doubt
	reject
	correct response
	draw attention to particular part of candidate's response
	information omitted

Subject-specific Marking Instructions

- a. If a candidate alters his/her response, examiners should accept the alteration.
- b. 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.

Eg

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, eg 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, eg 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.

Eg If a question requires candidates to identify a city in England, then in the boxes

Edinburgh	
Manchester	
Paris	
Southampton	

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).

Edinburgh			✓			✓	✓	✓	✓	
Manchester	✓	x	✓	✓	✓				✓	
Paris				✓	✓		✓	✓	✓	
Southampton	✓	x		✓		✓	✓		✓	
Score:	2	2	1	1	1	1	0	0	0	NR

Question		Answer	Mark	Guidance
1	(a)	machines are used to gather the harvest <input type="checkbox"/> the whole plant is harvested. <input type="checkbox"/> only the fruits are harvested <input checked="" type="checkbox"/>	1	if both a correct and an incorrect box is ticked no marks
	(b)	looking at the crop <input type="checkbox"/> counting the strawberries <input type="checkbox"/> weighing the strawberries <input checked="" type="checkbox"/> measuring the size of each strawberry <input type="checkbox"/>	1	if both a correct and an incorrect box is ticked no marks
	(c)	D, C, B, A	2	four correct =2, three or two correct = 1 mark
	(d) (i)	fungus/bacteria	1	accept mould treat virus as neutral
	(ii)	feed on them/contaminate them/leave waste products	1	Accept rot/mouldy
Total			6	

Question		Answer	Mark	Guidance
2	(a)	ring around tomatoes	1	
	(b)	being fertilised <input type="checkbox"/> rotting <input checked="" type="checkbox"/> photosynthesising <input type="checkbox"/> germinating <input checked="" type="checkbox"/> being pollinated <input type="checkbox"/>	2	if more than two ticks deduct one mark for each incorrect answer
	(c)	use 100 seeds; plant/sow; in suitable conditions/with water, warmth, count number that germinate, convert to % if 100 not used	3	
	(d) (i)	4.0kg	1	
	(ii)	3.5kg	1	
	(iii)	in greenhouse, warmer; protected from wind/heavy rain/animals; temperature controlled; water controlled; faster rate of photosynthesis; so more food and more growth;	2	any two accept "could have artificial light to speed up growth" for two marks
Total			10	

Question		Answer	Mark	Guidance
3	(a)		2	2 or 3 lines correct = 2 marks 1 line correct = 1 marks reject two lines from/to the same box
	(b) (i)	sterile/no microorganisms/no bacteria/no fungi/no viruses/not contaminated	1	ignore clean/hygienic/no disease reject references to germs
	(ii)	reference to disease causing/infections/ reference to preventing escape	1	accept references to being dangerous/harmful
	(c) (i)	gets less/quickly broken down/used (as food) uses appropriate figures; (1) no further breakdown/amount stays the same (1)	2	
	(ii)	very little sugar left/alcohol kills yeast/fermentation complete;	1	
Total			7	

Question			Answer	Mark	Guidance
4	(a)	(i)	C	1	
		(ii)	idea of genetic differences/ different breeds/ sheltered or not/ pests/ kept in shelter or not/ different ages/ different metabolisms/	1	
	(b)		fertiliser; supplies minerals/nutrients; for plant growth; increases yield; helps water retention; avoids buying fertiliser; so farmer can be organic; used as fuel;	2	any two reject contains chemicals
	(c)		has reached a certain/high standard	1	
Total				5	

Question			Answer	Mark	Guidance
5	(a)	(i)	shows 20/100 X 12; (1) 2.4	2	2 marks for correct answer accept 24 for 1 mark
		(ii)	most...apple; least...oil seed rape;	1	both required
	(b)	(i)	sugar/glucose on left of equation; alcohol on right of equation;	2	
		(ii)	to kill (unwanted) bacteria/yeasts/microorganisms/microbes; to sterilise wort; to concentrate wort;	1	
		(iii)	so added yeast will not be killed/safe to add yeast/so yeast can cause fermentation	1	
		(iv)	D;	1	
			Total	8	
			Paper Total	36	

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

Education and Learning

Telephone: 01223 553998

Facsimile: 01223 552627

Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored

Oxford Cambridge and RSA Examinations
is a Company Limited by Guarantee
Registered in England
Registered Office; 1 Hills Road, Cambridge, CB1 2EU
Registered Company Number: 3484466
OCR is an exempt Charity

OCR (Oxford Cambridge and RSA Examinations)
Head office
Telephone: 01223 552552
Facsimile: 01223 552553

© OCR 2013



001