



Rewarding Learning

General Certificate of Secondary Education

Agriculture and Land Use

Unit 2

Animals on the Land

[GAU21]

Assessment

**MARK
SCHEME**

General Marking Instructions

Introduction

Mark schemes are intended to ensure that the GCSE examinations are marked consistently and fairly. The mark schemes provide markers with an indication of the nature and range of candidates' responses likely to be worthy of credit. They also set out the criteria which they should apply in allocating marks to candidates' responses.

Assessment objectives

Below are the assessment objectives for GCSE Agriculture and Land Use.

Candidates must:

- recall, select, and communicate their knowledge and understanding of agriculture and land use in the environment and land-based industries (AO1);
- apply skills, knowledge and understanding of agriculture and land use in the environment and land-based industries and other contexts (AO2); and
- analyse and evaluate evidence, make reasoned judgements and draw conclusions based on evidence (AO3).

Quality of candidates' responses

In marking the examination papers, examiners should be looking for a quality of response reflecting the level of maturity which may reasonably be expected of a 16-year-old which is the age at which the majority of candidates sit their GCSE examinations.

Flexibility in marking

Mark schemes are not intended to be totally prescriptive. No mark scheme can cover all the responses which candidates may produce. In the event of unanticipated answers, markers are expected to use their professional judgement to assess the validity of answers.

Positive marking

Markers are encouraged to be positive in their marking, giving appropriate credit for what candidates know, understand and can do rather than penalising candidates for errors or omissions. Markers should make use of the whole of the available mark range for any particular question and be prepared to award full marks for a response which is as good as might reasonably be expected of a 16-year-old GCSE candidate.

Awarding zero marks

Marks should only be awarded for valid responses and no marks should be awarded for an answer which is completely incorrect or inappropriate.

Marking Calculations

In marking answers involving calculations, examiners should apply the 'own figure rule' so that candidates are not penalised more than once for a computational error.

Types of mark schemes

Mark schemes for tasks or questions which require candidates to respond in extended written form are marked on the basis of levels of response which take account of the quality of written communication.

Other questions which require only short answers are marked on a point for point basis with marks awarded for each valid piece of information provided.

Notation:

; denotes separate points

/ denotes alternative points

(alternative points do not gain extra marks)

			AVAILABLE MARKS
1	<p>(a) A = rectum B = rumen C = oesophagus</p>	[3]	5
	<p>(b) Any two from: break down food particles/to aid digestion; stores food; allows bacteria to live; fermentation occurs;</p>	[2]	
2	<p>(a) True True False (3 correct [2], 2 correct [1])</p>	[2]	7
	<p>(b) (i) Any two from: colostrum helps raise the body temperature; colostrum contains higher level of nutrients/energy/fat; colostrum contains antibodies/white blood cells; cheaper than artificial colostrum;</p>	[2]	
	<p>(ii) Any two from: not enough colostrum produced/none produced; poor quality colostrum/ cow has mastitis/illness/death; saves farmer time;</p>	[2]	
	<p>(iii) milk is more expensive than other feeds/to aid stomach development/ saves farmer time</p>	[1]	
3	<p>(a) Any two from: economics/price; ethical; cultural/religious; medical condition; quality; appearance; packaging/branding; locally produced; use by date</p>	[2]	12
	<p>(b) (i) Any two from: correct weight; correct conformation; health status; clean; correct withdrawal period for drugs; both ear tags are intact; paperwork</p>	[2]	
	<p>(ii) Any four from: health inspection before; slaughtered/stunned; bled out; gutted out; inspected and stamped; graded; butchered; refrigerated/hung; packaged; relevant transport;</p>	[4]	
	<p>(c) (i) freezing; tinning; drying (3 correct = [2] marks; 1/2 correct = [1] mark) (-1 for each incorrect box)</p>	[2]	
	<p>(ii) removes air; less bacterial/microorganism growth</p>	[2]	

			AVAILABLE MARKS	
4	(a)	commercial: Limousin/Holstein (Friesian)/Charolais/Angus/AVP traditional: Belted Galloway/Irish Moiled/Whitepark/Kerry/AVP	[2]	
	(b)	(i) conformation: shape of an animal's frame/accept correct example (straight back) (do not accept reference to size unless qualified) longevity: the length of their productive life/profitable life (do not accept how long an animal lives for)	[2]	
	(ii)	Any two from: large litter size; greater number of teats; good mothering; milk production; fast growth; disease resistance;	[2]	6
5	(a)	Advantages: increased welfare/more natural; less capital cost; higher sale value; higher perceived quality; no slurry storage needed; AVP [Max two for advantages] Disadvantages: longer finishing time/slower growing; more feed required; lower stocking density; more labour; more land needed; damages field; more parasites/other diseases [Max two for disadvantages]	[4]	
	(b)	(i) order is: dipping; anthelmintics; minerals; parasite	[4]	
	(ii)	bottlejaw/loose wool/anaemia/sudden death/loss in condition/ abnormal behaviour	[1]	9
6	(a)	(i) graph points drawn correctly (within 2 mm) – 2 marks (–1 for each mistake)	[2]	
	(ii)	smooth curve	[1]	
	(b)	(i) as more concentrates are fed then milk yield increases; reference to data; milk yield increases by smaller amounts/ non uniform increase	[2]	
	(ii)	2100–2250	[1]	6

7 Legislation: Nitrates Directive/Nutrient Action Programme

description: over application of fertilisers/slurry; run off; algal bloom; blocks sunlight; plants die; algae die; bacteria decompose; oxygen used up; aquatic life dies; (Max. 5)

method: correct application rate; don't spread near waterways; don't spread in closed period; don't spread in wet conditions; don't spread on frozen ground; spread using trailing shoe/dribble bar/disc injector; catch effluent or dirty water

If candidates do not meet the minimum requirements set out in each band then they cannot access that mark band, no matter how many correct points they have. 1 mark is awarded for QWC if appropriate.

Band	Response	Mark
3	Candidates state the correct legislation and demonstrate a detailed and comprehensive knowledge and understanding of at least three steps of how eutrophication occurs and its effects. Clear description of two relevant water pollution prevention methods. Quality of written communication is excellent. Relevant material is organised with a high degree of clarity and coherence. Presentation, spelling, punctuation and grammar are of a high standard with appropriate use being made of specialist vocabulary.	[7]–[9]
2	Demonstrate an adequate knowledge and understanding of at least two steps of eutrophication. The description covers one method to reduce water pollution. Quality of written communication is good. Relevant material is organised with some clarity and coherence. Presentation, spelling, punctuation and grammar are of a reasonable standard to make meaning evident. There is some use being made of specialist vocabulary.	[4]–[6]
1	General statements provided about pollution, eutrophication and a method to reduce pollution. Quality of written communication is basic. The organisation of the material lacks clarity and coherence. Presentation, spelling, punctuation and grammar are at a basic level with little use of specialist vocabulary.	[1]–[3]
	No creditable comments.	[0]

[9]

9

			AVAILABLE MARKS	
8	(a)	(i) cost: purchases/expenses/outgoings for the business profit: total income minus all costs	[2]	10
	(ii)	Basic Payment Scheme: EFS: Red Tractor Scheme; FQAS; Countryside Management Scheme; (accept single farm payment scheme)	[1]	
	(iii)	Any two from: keep business viable; to boost efficiency; improve biodiversity; helps farmers diversify; improved animal welfare; new technology	[2]	
	(b)	(i) Completion of the table: In order: £296; 230; 66 (e.c.f.)	[3]	
	(ii)	£7600	[1]	
	(iii)	increase mechanisation/automation/sensors/AVP	[1]	

- 9 (a) TB → cow
Salmonella → chicken
Pneumonia → pigs

[2]

- (b) Indicative content

the symptoms of Brucellosis in cows include:

abortions; premature calf birth; swollen udders; loss in milk yield;
weak calves/still borns; retained placenta;

impacts on the Agriculture industry: time; money on testing; loss of sales;
less production; breeding stock loss; compensation;

government controls include: routine test slaughter; test imported cattle;
carry out abortion investigations; testing of milk; increased biosecurity;
increased awareness

If candidates do not meet the minimum requirements set out in each band then they cannot access that mark band, no matter how many correct points they have. 1 mark is awarded for QWC if appropriate.

Band	Response	Mark
3	Candidates demonstrate a detailed and comprehensive knowledge and understanding of the effects of Brucellosis (BR), its impact on the agricultural economy and how government controls it. Candidates apply their specific knowledge of BR to describe at least two symptoms of the disease and explain at least two ways it impacts on the N.I. agriculture industry and at least two ways that government controls the disease. Quality of written communication is excellent. Relevant material is organised with a high degree of clarity and coherence. Presentation, spelling, punctuation and grammar are of a high standard with appropriate use being made of specialist vocabulary.	[7]–[9]
2	Candidates demonstrate an adequate knowledge and understanding of the effects of Brucellosis and its impact on the N.I. agricultural economy. Candidates briefly describe at least one symptom of the disease and explain one way it impacts on the N.I. agricultural industry and at least one way that government controls the disease. Quality of written communication is good. Relevant material is organised with some clarity and coherence. Presentation, spelling, punctuation and grammar are of a reasonable standard to make meaning evident. There is some use being made of specialist vocabulary.	[4]–[6]
1	Candidates make general statements about Brucellosis, with no specific benefits effects of impacts discussed. Quality of written communication is basic. The organisation of the material lacks clarity and coherence. Presentation, spelling, punctuation and grammar are at a basic level with little use of specialist vocabulary.	[1]–[3]
	No creditable comments.	[0]

[9]

Total

AVAILABLE
MARKS

11

75