



Rewarding Learning

**General Certificate of Secondary Education
2024**

Agriculture and Land Use

Unit 2

Animals on the Land

[GAU21]

MONDAY 17 JUNE, MORNING

**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, examiners are expected to use their professional judgement to assess the validity of answers. If an answer is particularly problematic, then examiners should seek the guidance of the Supervising Examiner.

Positive marking

Examiners 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. Examiners 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.

Levels of response

Tasks and questions requiring candidates to respond in extended writing are marked in terms of levels of response. In deciding which level of response to award, examiners should look for the 'best fit' bearing in mind that weakness in one area may be compensated for by strength in another. In deciding which mark within a particular level to award to any response, examiners are expected to use their professional judgement. The following guidance is provided to assist examiners.

- **Threshold performance:** Response which just merits inclusion in the level and should be awarded a mark at or near the bottom of the range.
- **Intermediate performance:** Response which clearly merits inclusion in the level and should be awarded a mark at or near the middle of the range.
- **High performance:** Response which fully satisfies the level description and should be awarded a mark at or near the top of the range.

Quality of written communication

Quality of written communication is taken into account in assessing candidates' responses to all tasks and questions that require them to respond in extended written form. These tasks and questions are marked on the basis of levels of response. The description for each level of response includes reference to the quality of written communication.

For conciseness, quality of written communication is distinguished within levels of response as follows:

Level 1: Quality of written communication is basic.

Level 2: Quality of written communication is good.

Level 3: Quality of written communication is excellent.

In interpreting these level descriptions, examiners should refer to the more detailed guidance provided below:

Level 1 (Basic): The candidate makes only a limited selection and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

Level 2 (Good): The candidate makes a reasonable selection and use of an appropriate form and style of writing. Relevant material is organised with some clarity and coherence. There is some use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning clear.

Level 3 (Excellent): The candidate successfully selects and uses the most appropriate form and style of writing. Relevant material is organised with a high degree of clarity and coherence. There is widespread and accurate use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are of a sufficiently high standard to make meaning clear.

		AVAILABLE MARKS												
1	<p>(a) Must be in the correct order: parasite; sheep; reduced growth; [3]</p> <p>(b) drain ground; isolate infected/new stock; fence off risk areas; rotate crops; break cycle with regular drenches; use molluscicides; [2]</p>	5												
2	<p>(a) movements; deaths; gender; bloodline/progeny check; animal history check; TB status, animal health status; [2]</p> <p>(b) (i) Any two from: secure; instant; data is cross checked for errors; free to use; accessed anywhere; stored digitally; improves traceability, improves public confidence [2]</p> <p>(ii) requires ICT knowledge/requires training/requires internet connection/AVP [1]</p> <p>(c) Any two from: GPS; pedometers; robotic milking machine; embryo transfer; automatic feeders; AVP [2]</p>	7												
3	<p>(a) concentrates [1]</p> <p>(b) (i) Any two from: heating; lighting; labour; maintenance; bedding [2]</p> <p>(ii) income minus costs [1]</p> <p>(c)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">pigs only</th> <th style="width: 33%;">poultry and pig</th> <th style="width: 33%;">poultry only</th> </tr> </thead> <tbody> <tr> <td>stomach</td> <td>liver (given)</td> <td>gizzard</td> </tr> <tr> <td>anus</td> <td>small intestine</td> <td>cloaca</td> </tr> <tr> <td></td> <td></td> <td>proventriculus</td> </tr> </tbody> </table> <p style="text-align: right;">[6]</p>	pigs only	poultry and pig	poultry only	stomach	liver (given)	gizzard	anus	small intestine	cloaca			proventriculus	10
pigs only	poultry and pig	poultry only												
stomach	liver (given)	gizzard												
anus	small intestine	cloaca												
		proventriculus												
4	<p>Any three from: tractor: could run over someone causing injury; trailer: could topple over and cause damage or injury/could unhook and run over someone/hydraulics could fail and crush someone; soil: soil could be tipped on top of someone causing injury; overhead electric wires: could cause electrocution; [6]</p>	6												

			AVAILABLE MARKS		
5	(a) (i)	9000 (6000 – 13 000)	[1]	11	
	(ii)	Any three from: cheese; ice cream; yoghurt; butter	[3]		
	(b) (i)	200	[1]		
	(ii)	250 – 200 [1] = 50 [1]	[2]		
(c)	(i)	September	[1]		
	(ii)	a lot of cows are going dry in the autumn time so less milk/ grass quality is better in the spring/May time/more grass available/ calving rate is not constant	[1]		
(d)		2580 ÷ 100 × 80 [1]	[2]		
		= 2064 [1]			
6	(a)	Charolais/Belgian Blue; double muscled/excellent conformation/fast growing/ lean meat/high finished weight; Angus; polled/good temperament/easily fattened/hardy/good conformation/ high quality meat/good mothers; Hereford; polled/good temperament/longevity/high quality meat/good conformation/high finished weight; Holstein-Friesian/Holstein; high milk yield/high feed conversion rates/easy calving; AVP	[4]		9
	(b) (i)	ensure cow is in heat; safely restrain the cow in a crush or cubicle; thaw the straw (in 35 °C warm water)/cut the end of the straw/place the straw into the AI gun; wipe vulva clean with paper towel; gently place your arm into the rectum; guide the AI gun through the cervix; deposit the semen;	[4]		
	(ii)	natural fertilisation	[1]		

- 7 Leaving the farm: target weight; health status; clean; correct withdrawal period for drugs; both ear tags are intact; paperwork/movement forms
 Processing: health inspection; gassed/stunned; slaughtered/bled out; gutted out; inspected; graded;
 Made ready to sell: butchered; refrigerated/hung; packaged; labelled; transported to shops; AVP

AVAILABLE
MARKS

Band	Response	Mark
3	Candidates demonstrate a detailed and comprehensive knowledge and understanding of animal preparation and processing by giving seven points to include at least: two ways the animal is prepared to leave the farm, two stages of processing and two ways the product is made ready to sell. 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 a detailed and comprehensive knowledge and understanding of animal preparation and processing by giving four points to include at least: one way the animal is prepared to leave the farm, one stage of processing and one way the product is made ready to sell. 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 animal preparation and processing. 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

- 8 (a) fertiliser run off; algal bloom; blocks sunlight; plants die/algae die; bacteria decompose and oxygen used up; aquatic life dies; [4]
- (b) make dry silage/roof over the silo/ensure silage sealed properly; collect silage effluent (in tank); dilute/mix with slurry or water; spread on the ground; when weather conditions are suitable/correct time of year; away from open water sources [3]
- (c) air; slurry noise; farm machinery [2]

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- 9 effects on business: can't sell cattle; animals are culled; loss of production; loss of breeding stock; loss of jobs;

farmer prevent spread of TB: badger proof feed areas/sheds; isolate new stock until tested/isolate infected animals; badger proof fencing; double fencing around farm boundary; good hygiene/disinfection of feeding and drinking areas; don't share equipment/wash shared equipment; keep cattle off fresh slurry for 2 months; don't feed fresh unpasteurised milk to calves;

government helps to prevent the spread of TB: regular testing; advisory support; research on disease; financial support to farmers (to aid cooperation); restrict animal movement; test neighbouring farms;

Band	Response	Mark
3	Candidates demonstrate a detailed and comprehensive knowledge and understanding of TB by giving at least seven points to include: two effects of TB on the farm business, two ways the farmer can prevent the spread of TB, two ways the government helps to prevent the spread of TB. 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 a detailed and comprehensive knowledge and understanding of TB by giving at least four points to include: one effect of TB on the farm business, one way the farmer can prevent the spread of TB, and one way the government helps to prevent the spread of TB. 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 TB and its prevention. 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**

9

75