



*Rewarding Learning*

**General Certificate of Secondary Education  
2025**

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## **Agriculture and Land Use**

Unit 2

Animals on the Land

**[GAU21]**

**MONDAY 16 JUNE, AFTERNOON**

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**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
<b>1</b>	<p><b>(a)</b> Unhealthy;</p> <p>Any <b>two</b> from:  lame/holding foot;  poor condition/ribs showing/very thin;  head down/ears down/sunken eyes;  not alert/head down</p>	[3]	
	<p><b>(b)</b> Any <b>two</b> from:  freedom from hunger and thirst;  freedom from discomfort;  freedom from pain, injury or disease;  freedom to express normal behaviour;  freedom from fear and distress</p>	[2]	5
<b>2</b>	<p><b>(a)</b> <b>A</b> – (egg) shell;  <b>B</b> – albumen;  <b>C</b> – yolk;  <b>D</b> – air pocket</p>	[4]	
	<p><b>(b)</b> In correct order:  21;  humid;  turn</p>	[3]	7
<b>3</b>	<p><b>(a) (i)</b> Any <b>two</b> from:  good welfare standards; land management regulations; inspections/  minimum hygiene standards; membership fee/application process;  correct paperwork; any correct detail</p>	[2]	
	<p><b>(ii)</b> Any <b>two</b> from:  consumers have more confidence in food; farmers get paid a premium/  more for product; gives larger market access; advice given to farmers;  improves reputation</p>	[2]	
	<p><b>(b)</b> Red Tractor Scheme/Environmental Farming Scheme/Basic Payment Scheme/  Countryside Management Scheme/AVP</p>	[1]	5

		AVAILABLE MARKS
4	(a) (i) DMI is the total mass of food eaten per day; after <b>water</b> has been removed	[2]
	(ii) allows comparison of foods/it is a reliable intake figure/useful to help set targets/helps plan the ration	[1]
	(b) (i) $14 \div 18;$ $\times 100$ <b>or</b> $77.778;$ 78	[3]
	(ii) lose weight/lose condition/yield drops	[1]
	(iii) milk/mother	[1]
	(c) Any <b>two</b> from: scouring/poor rumen function/digestive problems; animal becomes overweight; increased labour/increased time; lead to trampling or poaching in the field; cost	[2]
	(d) iron – vital for healthy blood system; calcium – for bone and teeth development/reduces chance of milk fever; sodium/salt – needed to regulate fluids in body; magnesium – needed for energy (reactions)/reduces chance of milk fever; AVP	[2]
	5 (a) Holstein/Friesian/Fleckveih	[1]
	(b) (i) suitable X-axis scale (5 squares = 5 weeks)(more than half of grid); suitable Y-axis scale (5 squares = 5 litres) (more than half of grid); [3] for 0 or 1 plotting mistake; [2] for 2 or 3 plotting mistakes; [1] for 4–8 plotting mistakes; [1] for smooth curve	[6]
	(ii) <b>Lactation</b>	[1]
(c) Milk yield increases then yield decreases; Explanation: increases when the calf needs the most milk/decreases when the calf needs less milk Data reference [1]	[3]	
		12
		11

- 6 (a) Any **two** from:  
 breathe in slurry gases and die; PTO entanglement; fall into open manhole [2]
- (b) Any **three** from:  
 PTO guard; door open in shed; mixing point outside; manhole covered;  
 no cattle in shed; no children around; mix on windy day; have slurry gas alarm; have two people present when mixing; signage; dont stay in the tractor [3]
- (c) GPS/Global Positioning Satellite/autosteer [1]

7 **Symptoms:**

coughing;  
 rapid breathing/heaving chest/heavy breathing;  
 dehydration/sunken eyes;  
 loss of condition;  
 lack of appetite;  
 blue skin;  
 discharge from the eyes;  
 huddling together;  
 fever

**Treatment:**

antibiotics;  
extra vitamins and nutrients;  
 keep warm and dry

**Prevention:**

keep stocking density low;  
 good hygiene of feeding areas;  
 keep area dust free;  
 ventilation with no draughts or cold spots  
 prompt identification and treatment/quarantine  
 reduce or eliminate environmental stress  
 vaccination  
 'All in all out routine'/fill and clear houses in batches/separate new

AVAILABLE  
 MARKS

6

Band	Response	Mark
3	Candidates demonstrate a detailed and comprehensive knowledge and understanding of pneumonia in pigs by giving at least 7 marking points to include: <b>three</b> symptoms, <b>one</b> treatment and <b>two</b> ways to prevent the disease spreading on the farm. 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 knowledge and understanding of pneumonia in pigs by giving at least 4 marking points to include: <b>two</b> symptoms and <b>one</b> way to prevent the disease spreading on the farm. 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 pneumonia. 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) **X** – prostate gland/seminal vesicle;  
**Y** – sperm duct;  
**Z** – testis [3]
- (b) Any **two** from:  
less labour; no specialist equipment/training needed; more successful;  
less stressful on animal [2]
- (c) Any **four** from:  
selection of donor ewe/ram;  
super ovulation of donor ewe;  
heat synchronise donor and surrogate;  
inseminate/AI the donor ewe;  
flush the embryos;  
inspect the embryos;  
place fertilised embryo(s) into surrogate ewe [4]
- (d) Any **two** from:  
improves genetics/increase pedigree stock; can choose gender;  
more offspring from the donor female; eliminate stress of pregnancy on donor female [2]

11

9 Answers may appear in different sections and where relevant the pupil will be given credit.

**Features:** housed all/most of the year; larger/faster growing/commercial breeds; used more; higher stocking rate; uses more concentrates; uses more fertiliser/slurry; more technology used; better grass management zero grazing/high quality silage

**Advantages:** grow quicker; less weather dependent; less land needed; easier to manage farm; less field damage; more profit/cheaper food/higher yield

**Disadvantages:** concentrates are more expensive; diseases spread easier; increased capital costs; feet problems; more labour costs/time; perceived poorer animal welfare; less access to incentive schemes, e.g. Angus; water pollution more likely more slurry storage

Band	Response	Mark
3	Candidates demonstrate a detailed and comprehensive knowledge and understanding of intensive beef farming by giving at least 7 marking points to include: <b>two</b> features, <b>two</b> advantages and <b>two</b> disadvantages of farming beef intensively. 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 knowledge and understanding of intensive beef farming by giving at least 4 marking points to include: <b>one</b> feature, <b>one</b> advantage and <b>one</b> disadvantage of farming beef intensively. 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 intensive beef farming. 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**