



**General Certificate of Secondary Education**  
**2017**

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## **Agriculture and Land Use**

**Unit 2**

**Animals on the Land**

**[GAL21]**

**WEDNESDAY 7 JUNE, AFTERNOON**

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**MARK  
SCHEME**

## General Marking Instructions

### Introduction

Mark schemes are published to assist teachers and students in their preparation for examinations. Through the mark schemes teachers and students will be able to see what examiners are looking for in response to questions and exactly where the marks have been awarded. The publishing of the mark schemes may help to show that examiners are not concerned about finding out what a student does not know but rather with rewarding students for what they do know.

### The Purpose of Mark Schemes

Examination papers are set and revised by teams of examiners and revisers appointed by the Council. The teams of examiners and revisers include experienced teachers who are familiar with the level and standards expected of students in schools and colleges.

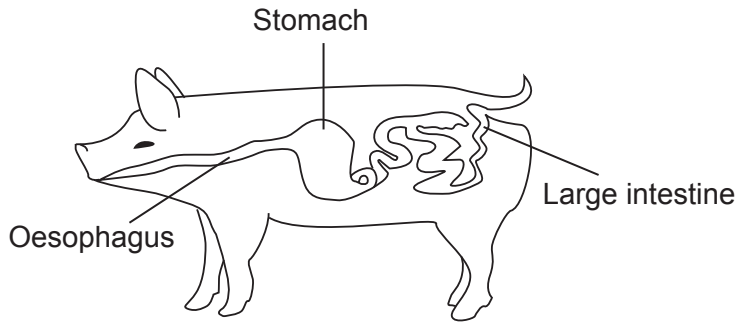
The job of the examiners is to set the questions and the mark schemes; and the job of the revisers is to review the questions and mark schemes commenting on a large range of issues about which they must be satisfied before the question papers and mark schemes are finalised.

The questions and the mark schemes are developed in association with each other so that the issues of differentiation and positive achievement can be addressed right from the start. Mark schemes, therefore, are regarded as part of an integral process which begins with the setting of questions and ends with the marking of the examination.

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all the markers are following exactly the same instructions and making the same judgements in so far as this is possible. Before marking begins a standardising meeting is held where all the markers are briefed using the mark scheme and samples of the students' work in the form of scripts. Consideration is also given at this stage to any comments on the operational papers received from teachers and their organisations. During this meeting, and up to and including the end of the marking, there is provision for amendments to be made to the mark scheme. What is published represents this final form of the mark scheme.

It is important to recognise that in some cases there may well be other correct responses which are equally acceptable to those published: the mark scheme can only cover those responses which emerged in the examination. There may also be instances where certain judgements may have to be left to the experience of the examiner, for example where there is no absolute correct response – all teachers will be familiar with making such judgements.

1 (a)



[3]

(b) Stomach – churns food/adds enzymes/adds acid/adds gastric juice/  
digestion of protein/holds food

Large intestine absorbs water/stores faeces

[2]

(c) (i) Oesophagus/small intestine/large intestine/mouth/caecum

[1]

(ii) Crop/proventriculus/gizzard/cloaca

[1]

7

2 (a) 2/3, 2–3

[1]

(b) 1 to 5

[1]

(c) increased health problems/less fertility

[1]

3

AVAILABLE  
MARKS

- 3 (a) lungs  
laboured breathing  
antibiotics [3]
- (b) (i) Any **two** from:  
weight loss; less appetite; increased thirst; discoloured combs  
Any valid point [2]
- (ii) house sterilisation; screening of new stock; culling infected  
stock; vaccination; footbath; good personal hygiene;  
prevent wildlife entry/vermin control; restricted entry of people  
Any valid point [2]
- (iii) Antibiotics, heat treatment, stripping teat (not medicine) [1]
- (c) 2 correct [2]

Freedom from hunger and thirst.	/
Freedom from pain, injury and disease.	/

[2]

- 4 (a) (i) Dairy – pedometers/ID collars/automatic feeders/robotic milkers/  
CCTV  
Any valid point [1]
- Arable – GPS/satellite tracking system  
Any valid point [1]
- (ii) Dairy farm – pedometers detect frequency of movements/  
which indicates when cow is on heat;  
Calving index – improves/saves labour  
GPS – gives accurate location;  
– keeps a record; correct application  
Helps business – reduces waste/saves money/reduces pollution  
At least [1] for helping business  
**Not** “tractor” [2]
- (b) Advantage: improve income/promotes biodiversity/improves environment [1]  
Disadvantage: paperwork/inspections/payment not always available/  
more rules  
Any valid point [1]

AVAILABLE  
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6

5 (a) Vet; medicines; housing; bedding; labour/contractors; Any valid point [2]

(b) (i)	Daily Food Intake (kg) of Dairy cow	Dry matter percentage %	Dry matter (kg)
Fresh Grass	75	18	13.5 [1]
Concentrated meal	6	85	5.1 [1]
		Total DMI (kg)	18.6 [1]

allow ecf

correct answer [3]

(ii) DMI is reduced [1]

(c) (i) Forage: used to provide roughage – stimulates rumen function  
provides energy/protein – for growth/yield [2]

Concentrates: **more** protein/**more** energy – for extra yield  
increased nutrients; health [2]

(ii) breed; age; gender;  
stage of pregnancy; health  
weather; housing [2]

(iii) mouldy/damp; dusty; bad smell; heating; evidence of vermin [2]

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6 (a) Bed and breakfast/campsite; farm shop; open farm; food products; biodigester; niche product; activity farm  
Any valid point [3]

(b) Benefits examples:  
extra income; potential extra grant aid; can make farm more viable/  
sustainable; family involvement in business; spreads business risks;  
better working hours; new skills;

Benefits to wider economy

Employment; development of rural areas/infrastructure; greater consumer choice/niche market products; brings money into local area

Drawbacks examples:

extra capital set-up costs; requires training; financial risks; higher running costs and overheads/more labour costs;

Band	Response	Mark
3	Candidates demonstrate a detailed and comprehensive knowledge and understanding of <b>three</b> benefits to the farm business, <b>two</b> benefits to the wider economy and suggest <b>two</b> drawbacks. 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 <b>two</b> benefits to the farm business, <b>one</b> benefit to the wider economy, and <b>one</b> drawback. 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 about the main benefits and drawbacks of a named farm diversification. 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]

AO2 [4]  
AO3 [5]

AVAILABLE  
MARKS

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			AVAILABLE MARKS	
7	(a)	• quality control – collecting/scanning	[3]	
		• cleaning		
		• grading/stamped		
		• packaging		
	(b)	ethical reasons; cultural/religious reasons; branding/packaging; sell-by date; quality/nutrition; locally produced; appearance	[2]	
	(c)	(i) free range egg production increases	[1]	7
		(ii) increasing consumer demand/more interest in welfare conditions of laying hens/better quality	[1]	
8	(a)	(i) hardiness growth rate	[2]	
		(ii) Friesian, Charolais, Angus, Belgian Blue, Hereford	[1]	
		(iii) Sussex Any valid point	[1]	
	(b)	(i) quality is better/niche product	[1]	
		(ii) preserving the gene pool; keeping traits for breeding/reduce inbreeding; preserve local interest/tourism	[2]	

9 Indicative content (example for 'Dairy' answer)

Features:

housed all year round; more meal/higher inputs; higher stocking rate; choose fast growing bloodlines; milk 3 × a day (dairy only); artificial lighting; better grass management; technology

Advantages:

higher yield; easier to monitor; easier to control feed/inputs; less field damage; animal waste used to generate electricity; less land needed; less energy wasted by animals; job creation; more profit

Disadvantages:

higher input costs per animal; diseases spread easier; increased capital costs; slurry storage; higher replacement rates; **perceived** poorer animal welfare; feet problems; more labour **costs/time**

Band	Response	Mark
3	Candidates demonstrate a detailed and comprehensive knowledge and understanding of <b>two</b> features of operating this farm system intensively, <b>two</b> advantages and <b>two</b> disadvantages of intensive management. 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 <b>one</b> feature of operating this farm system intensively, <b>two</b> advantages and at least <b>one</b> disadvantage of intensive farm management. 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 about the intensive system chosen. 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]

AO2 [4]

AO3 [5]

**Total**

AVAILABLE  
MARKS

9

**75**