Rewarding Learning

General Certificate of Secondary Education
2016

Agriculture and Land Use

Unit 2

Animals on the Land

[GAL21]

WEDNESDAY 8 JUNE, AFTERNOON

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.

					AVAILABLE MARKS
1	**(a)**	**(i)**	A = Straw B = Silage/grass/haylage C = Meal/concentrate/nuts	[3]	
		(ii)	Dry suckler cow Feed type: straw or silage or both	[1]	
			Explanation: as cow is not in milk/does not have high energy needs/ is no longer suckling a calf/maintenance ration/silage has more energy than straw	[1]	
			Finishing bullock Feed type: silage/straw and meal	[1]	
			Explanation: as bullock weight gain is necessary/production ration/ meal contains more energy/more nutrients/adds roughage	[1]	
	(b)		Any **two** of the following: Age; Stage of pregnancy; Gender; Environmental conditions; Breed; Health;	[2]	9
2	**(a)**		Any **two** of the following: Interest in food; level of alertness; skin and coat condition; colour of urine; colour of mucous membrane; wet nose; example of normal behaviour	[2]	
	(b)	**(i)**	Bacteria	[1]	
		(ii)	Hard/red/swollen or painful udder; clots/discoloured milk; reduced milk yield	[2]	
		(iii)	Any **two** of the following ways: Washing/wiping teats; under-milking; isolating infected cows; prevent over-milking; clean bedding for cows; early treatment; cull chronic cases; vaccinations	[2]	
		(iv)	Any **two** of: Antibiotics; heat treatment/uddermint; teat stripping; cleaning teat/ iodine spray	[2]	9
3	**(a)**	**(i)**	2 litters	[1]	
		(ii)	250–300 eggs/yr	[1]	
	(b)		Cow C	[1]	
			Reason: Cow C has high milk yield; has the shortest calving interval.	[2]	

					AVAILABLE MARKS
	(c)	**(i)**	Holstein; Hereford; Limousin Any valid point	[1]	
		(ii)	Growth rate; conformation; hardiness; ease of calving; longevity; meat quality Any valid point	[2]	8
4	**(a)**	**(i)**	Correct order is: Excessive amounts of nitrates; Algal growth; Algal death; Bacterial decomposition; Fish death All 3 correct = 2 marks 1 or 2 correct = 1 mark	[2]	
		(ii)	Eutrophication	[1]	
	(b)	**(i)**	Fertiliser; slurry/sewage; dirty yard water; waste milk; silage effluent	[2]	
		(ii)	Nitrates directive	[1]	6
5	**(a)**		X = Chalazae Y = Yolk Z = Air pocket	[3]	
	(b)	**(i)**	Missing words: …18–21 days ... … rooster/sperm …	[2]	
		(ii)	Any **two** of: Temperature; Ventilation; Turning/rotating; Hygiene of equipment;	[2]	
	(c)		As hours of daylight increase the egg laying probability % increases and then decreases; maximum at 13 hours	[2]	9

AVAILABLE MARKS

6 **(a)** Any **three** of:

- **identify** the hazard/s;
- level and type of risk/or injury/likelihood;
- precautions/mitigating actions/prevention;
- review the risk assessment and update as required;
- steps to follow if accident occurs [3]

(b) Slurry injection; trailing shoe; splash plate; dribble bar [2]

(c)

Risk	Prevention	Category
Toxic gas	ventilation; mix regularly/aerator; escape route/ladder; signage; alarm; training; keep people away; safe distance; involve a "watcher"; keep animals out	Storage or mixing
Falling in/Drowning	signage; fencing; manhole cover/slats/ guard; maintenance; training	Storage or mixing
Machinery Tipping	monitor weather/ground conditions; drive up and down hill/not across; no passengers; training; maintenance	Applying
Road safety	do not overload tractor	
PTO (entanglement)	guards/clips; no loose clothing; keep people away; training; maintenance	Mixing or applying
Pollution	maintenance of storage;	Storage
	apply in correct weather; do not apply near waterways	Applying
Slurry Biohazard	PPE; good hygiene	Mixing or applying

No points may be repeated

Band	Response	Mark
3	Candidates demonstrate a detailed and comprehensive knowledge and understanding of the main dangers associated with the use of slurry on farm and how to reduce these risks. Candidates discuss in detail at least four risks with one from each of storage, mixing and applying slurry and how they can be reduced. 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 of the main dangers associated with the use of slurry on farm. Candidates discuss any three risks and how any can be reduced. 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 dangers associated with the use of slurry on farm. 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] 14

7 (a) Costs

Any **two** of:
Fertiliser;
Housing;
Medicines/veterinary bills;
Insurance;
Scanning/shearing;
Concentrate/meal/forage/mineral supplement;
Electricity;
Machinery;
Fuel;
Workers/contractors;

Income

Any **two** of:
Wool sales;
Store sales;
Single Farm Payment;
Lamb sales;
Breeding ewe sales;
Ram sales; [4]

(b) £6125 [1]

(c) (i) £2000 (working out = 1 mark) [2]

(ii)
- Extrapolate trend for Farm A and B;
- Find difference on graph;
- £1600–£2000; [3] 10

8 (a) Northern Ireland Farm Quality Assurance Scheme; single farm payment;
Northern Ireland Countryside Management Scheme (NICMS);
Red Tractor Scheme [1]

AVAILABLE MARKS

(b)

Band	Response	Mark
3	Candidates demonstrate a detailed and comprehensive knowledge and understanding of a scheme's main requirements, benefits and drawbacks. Candidates describe two scheme requirements, discuss at least two benefits of taking part in a scheme and suggest at least two drawbacks to the farmer. 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 of a scheme's main benefits **and** drawbacks. 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 schemes. 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] 10

AVAILABLE MARKS

Main requirements:
land management;
application process;
business ID/farm number;
animal movements/traceability;
inspections;
hygiene standards;
health and safety;
medication records;
welfare standards (minimum)

Benefits:
financial support;
market access/better price;
environmental/wildlife/flora;
animal welfare;
training schemes;
safer working environment

Drawbacks:
paperwork;
inspections;
investment of time;
delayed payments;
may reduce stocking rate;
less income;
more capital costs;
more restrictions

Total **75**