



General Certificate of Secondary Education
2014

Centre Number

71

Candidate Number

Agriculture and Land Use

Unit 2

Animals on the Land

[GAL21]

FRIDAY 13 JUNE, AFTERNOON

TIME

1 hour 15 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.

Answer **all eight** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 75.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in questions **6** and **8**.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	

Total Marks	
--------------------	--

- (c) Farms can be dangerous places to work. Farmers can reduce danger by carrying out risk assessments.



© iStock/ Thinkstock

Read the information about spraying crops in the box below and answer the questions that follow.

During the growing season, farmers often spray crops to control weeds and diseases. Some of these chemicals are harmful. They can burn skin. Fumes can cause breathing problems.

REMEMBER: A **hazard** causes a risk, and a **risk** is how a hazard causes harm.

- (i) State **one** hazard.

_____ [1]

- (ii) Give two risks.

1. _____

2. _____ [2]

- (iii) How can **one** of these risks be reduced?

 _____ [1]

Examiner Only

Marks Remark

- 2 (a) Farm animals have different gestation periods. The gestation period is the length of time a pregnancy lasts.

Draw lines to match each animal to its typical gestation period.

Animal	Gestation period
pig	9 months
sheep	5 months
cow	3 months, 3 weeks, 3 days
	1 month, 1 week, 1 day

[3]

- (b) Breeding animals is an important part of farming. Different fertilisation methods are used on farms.

Two fertilisation methods used with farm animals are Artificial Insemination (AI) and embryo transfer.

- (i) Describe each of these fertilisation methods.

- Artificial Insemination

 _____ [1]

- Embryo transfer

 _____ [1]

Examiner Only	
Marks	Remark

- (ii) Embryo transfer is expensive.
Why would a farmer choose this fertilisation method?

_____ [1]

- (iii) Why is **natural fertilisation** the method most commonly used for hill sheep flocks?

_____ [1]

- (c) Complete the sentences below about liver fluke.

Choose the missing words from:

bacteria **parasites** **reduced growth** **drenches**
creams **lameness** **sheep** **caged hens**

Liver fluke can be harmful to _____.

One cause of liver fluke is eating grass containing _____.

A symptom of this disease is _____.

_____ are used to treat liver fluke. [4]

Examiner Only	
Marks	Remark

BLANK PAGE

- (c) Mixed farms are common in Northern Ireland. A mixed farm is a farm that has more than one business area. Farmers need to be able to calculate the profit from each business area on a mixed farm.

The table below shows the income and costs for two farm business areas on a mixed farm.

- (i) Complete the shaded boxes in the table below by calculating the following:

- the total income per sheep
- the total cost per cow
- the profit per sheep
- the profit per cow

	Business Area	
	Lowland sheep	Suckler cows
	Income per sheep (£)	Income per cow (£)
Lamb/calf sales	136	440
Wool sales	3	0
Total income (£)		440

	Cost per sheep (£)	Cost per cow (£)
Straw bedding	4	48
Concentrate meal	18	154
Forage	9	58
Medicine	7	38
Casual labour	5	25
Other costs	11	15
Total cost (£)	54	

Profit (£) =		
---------------------	--	--

[4]

Examiner Only

Marks Remark

(ii) Give two ways that the suckler cows business area could be made more profitable.

Explain your answers.

1. _____

_____ [2]

2. _____

_____ [2]

Examiner Only	
Marks	Remark

4 The photograph below shows a farmer spreading slurry.

Slurry can be used as a fertiliser on the farm.



© iStock/ Thinkstock

(a) Explain why **mixing** slurry can be dangerous.

 [2]

(b) Slurry can be a source of pollution.

Give two other sources of farm pollution.

1. _____
2. _____ [2]

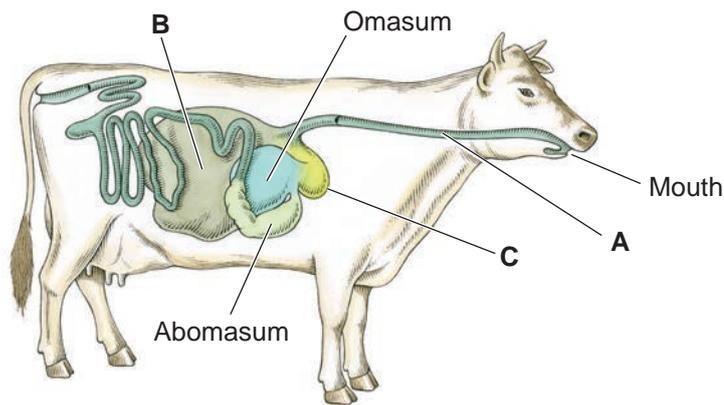
(c) Nitrates from fertilisers will sometimes pass from the soil into waterways. High levels of nitrates will cause changes to water quality. This is called **eutrophication**.

What happens in waterways as eutrophication occurs?

 [3]

Examiner Only	
Marks	Remark

5 (a) The diagram below shows the digestive tract of a cow.



© John Woodcock/ Thinkstock

(i) Name the parts labelled **A**, **B** and **C**.

A _____

B _____

C _____

[3]

(ii) Poultry and pigs have different digestive tracts.

Sort the following named parts of the poultry and pig digestive tracts into the correct boxes.

The first one has been done for you.

- ~~oesophagus~~
 - gizzard
 - crop
- small intestine
 - stomach
 - proventriculus

Poultry only	Poultry and Pigs	Pigs only
	oesophagus	

[5]

Examiner Only	
Marks	Remark

Farm animals have different feed requirements.

(b) The energy and fibre content of feeds vary with the type of animal being fed.

(i) Name one type of animal feed that is **high** in energy and **low** in fibre.

_____ [1]

(ii) Name one type of animal feed that is **low** in energy and **high** in fibre.

_____ [1]

(c) The type of feed used in organic (extensive) farming is different to the feed used in intensive farming.

Organic farming



© iStock/ Thinkstock

Intensive farmi



© Zoonar/ Thinkstock

Describe two other ways that organic farming is **different** to intensive farming.

1. _____

2. _____

_____ [2]

Examiner Only	
Marks	Remark

[9]

Examiner Only	
Marks	Remark

7 The table below shows **two** rations for feeding cows during winter.

One is a maintenance ration for a dry cow.
The other is a production ration for a lactating cow.



© iStock/ Thinkstock

- (i) Use the figures in the table below to calculate the total **Dry Matter Intake (DMI)** of each ration in kg/animal/day.
Write your answers in the shaded boxes in this table.

	Ration A	Ration B
Feed type	DMI (kg/animal/day)	DMI (kg/animal/day)
grass silage	15	10
concentrate meal	5	2
straw	1	4
Total DMI		

[2]

- (ii) Identify which ration is the **production ration**.
Explain why this ration is better for the lactating cow in winter.

Ration _____ is the production ration. [1]

Explanation _____

_____ [2]

Permission to reproduce all copyright material has been applied for.
In some cases, efforts to contact copyright holders may have been unsuccessful and CCEA
will be happy to rectify any omissions of acknowledgement in future if notified.