



General Certificate of Secondary Education
2015

Centre Number

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Candidate Number

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Agriculture and Land Use

Unit 2

Animals on the Land



GAL21

[GAL21]

FRIDAY 29 MAY, 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.

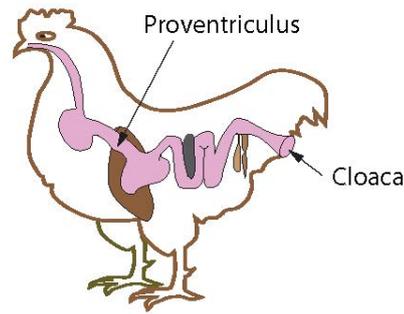
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

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

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

Total Marks	
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1 The diagram below shows the parts of the avian digestive tract.



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(a) Label the following parts of the avian digestive tract on the above diagram.

crop **oesophagus** **gizzard** [3]

(b) Describe the **function** of each of these parts of the avian digestive tract.

crop _____

oesophagus _____

gizzard _____

_____ [3]

Examiner Only	
Marks	Remark

2 Farm biosecurity is very important to prevent spread of harmful animal diseases.

(a) Complete the sentences below on disease prevention measures. Choose the missing words from:

concentrates

drenches

foot baths

wood shavings

teat washing

foot trimming

internal parasites

bloat symptoms

To prevent foot scald, sheep are walked through _____.

_____ is practised on dairy cows before

they are milked to prevent mastitis. Cattle and sheep are regularly dosed

with _____ to prevent build-up of

_____.

[4]

(b) Give **two** legal requirements for movement of animals over long distances.

1. _____

2. _____ [2]

(c) Animal medicines must be used safely on the farm. Describe **three** important things that a farmer must understand regarding safety of medicines.

1. _____

2. _____

3. _____ [3]

Examiner Only	
Marks	Remark

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3 Selective breeding of farm animals has led to the development of different animal breeds.

(a) (i) Growth rate is one trait often used in selective breeding. State **two** other traits commonly used in selective animal breeding.

1. _____
2. _____ [2]

(ii) Name **one** example of a cattle breed and **one** example of a poultry breed.

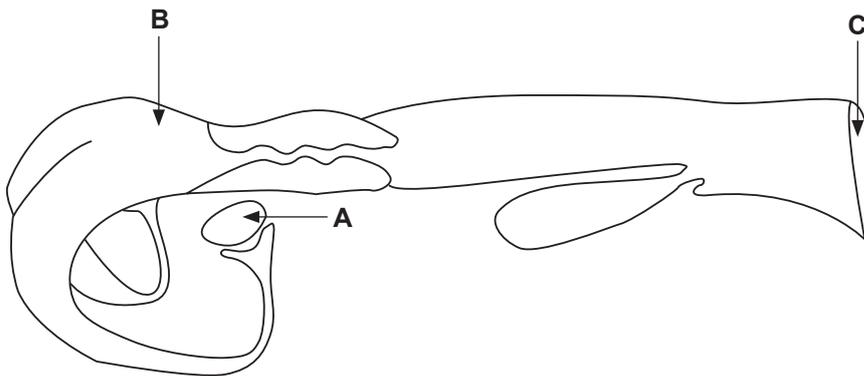
cattle: _____

poultry: _____ [2]

(iii) Give **two** reasons why it is important to prevent rare breeds of farm animals from dying out.

- _____
- _____
- _____ [2]

(b) The diagram below shows the reproductive system of a cow.



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

A _____

B _____

C _____ [3]

Examiner Only	
Marks	Remark

- (ii) Artificial Insemination (AI) is used as an alternative to natural fertilisation.

The table below shows a number of statements about AI.

Decide if the statements in the table below are advantages or disadvantages. For each statement place a tick (✓) in the correct box. One has already been done for you.

Statement	Advantage	Disadvantage
semen is easier to transport	✓	
success depends on correct detection of heat		
cheaper than buying a stock bull in the short term		
semen is introduced to more cows than the bull could serve		

[2]

- (c) Describe **two** features of colostrum and explain how these benefit the newborn animal.

feature: _____

benefit: _____

_____ [2]

feature: _____

benefit: _____

_____ [2]

Examiner Only

Marks Remark

- 4 (a) (i) Define the term 'dry matter intake' (DMI) and explain why it is a useful measurement for farmers.

 [2]

- (ii) A suckler cow eats 40 kg fresh weight of maize silage with a dry matter percentage of 30%. Calculate the dry matter intake (DMI). (Show your working out.)

_____ kg [2]

- (b) The table below shows typical DMI values for three animals that are out grazing grass day and night.

The correct DMI value for a dairy cow has been circled.

Use this answer to help you select the correct DMI values for the lambed ewe and the yearling beef heifer.

Circle the correct DMIs for these animals in the table.

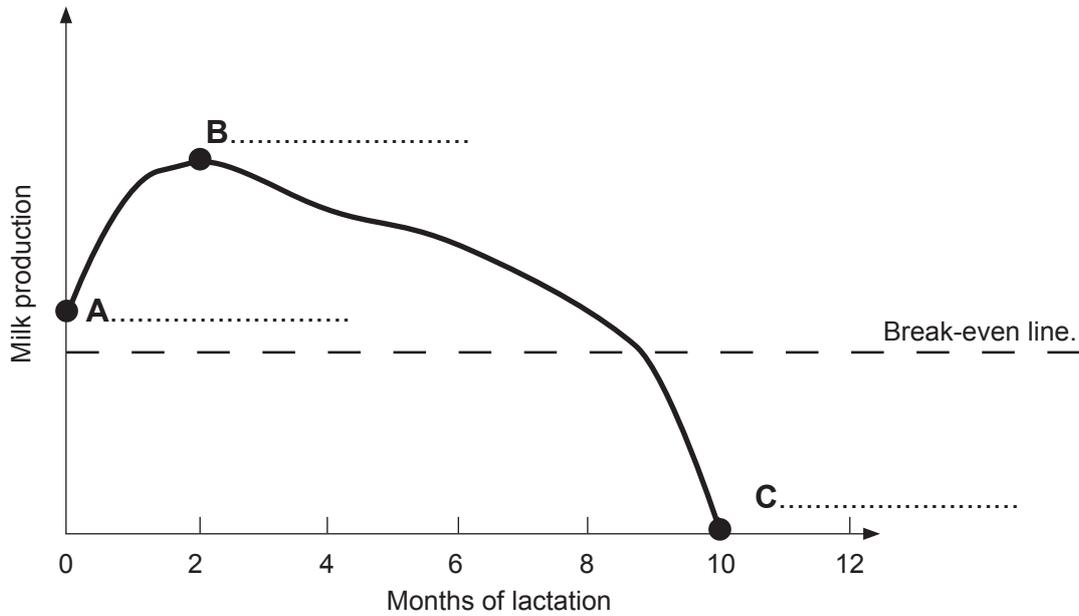
	DMI (kg)	DMI (kg)	DMI (kg)
Dairy cow	5	17	35
Lambled ewe	4	10	19
Yearling beef heifer	18	8	3

[2]

Examiner Only

Marks Remark

5 The dairy cow lactation curve below shows the stages of a lactation.



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(a) Name the stages at **A**, **B** and **C** on the graph above. [3]

(b) Use the graph to state how long the lactation lasts.

_____ months [1]

(c) During which month is the cow most profitable?

_____ [1]

Examiner Only	
Marks	Remark

7 Pollution can be caused by farm waste.

(a) (i) Name **two** types of farm waste.

1. _____

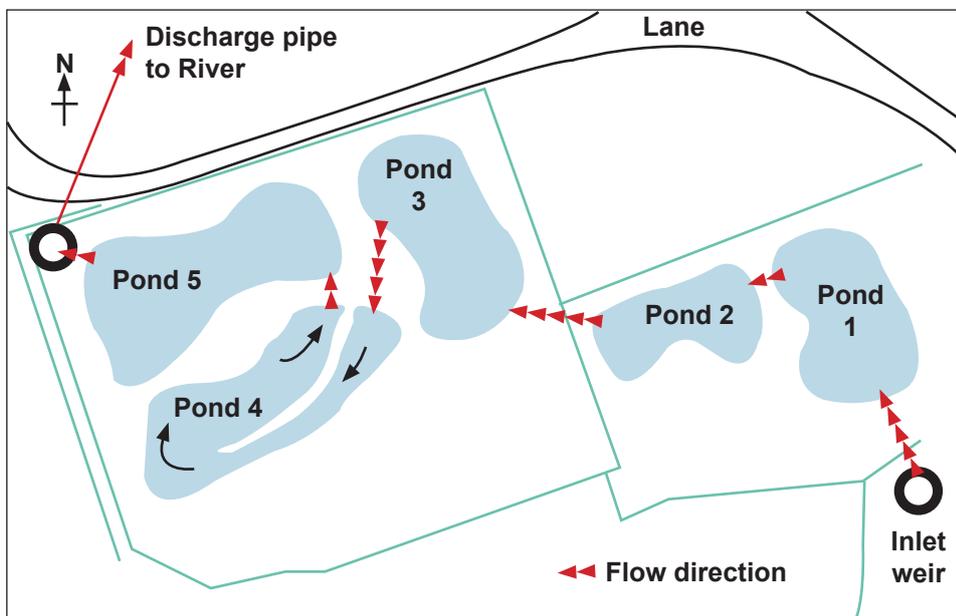
2. _____

[2]

(ii) The European Union (EU) makes laws for the disposal of farm waste. Name **one** EU directive that is used to control farm pollution.

_____ [1]

Reed bed systems can be used to purify dirty farm water. The map below shows a reed bed system.



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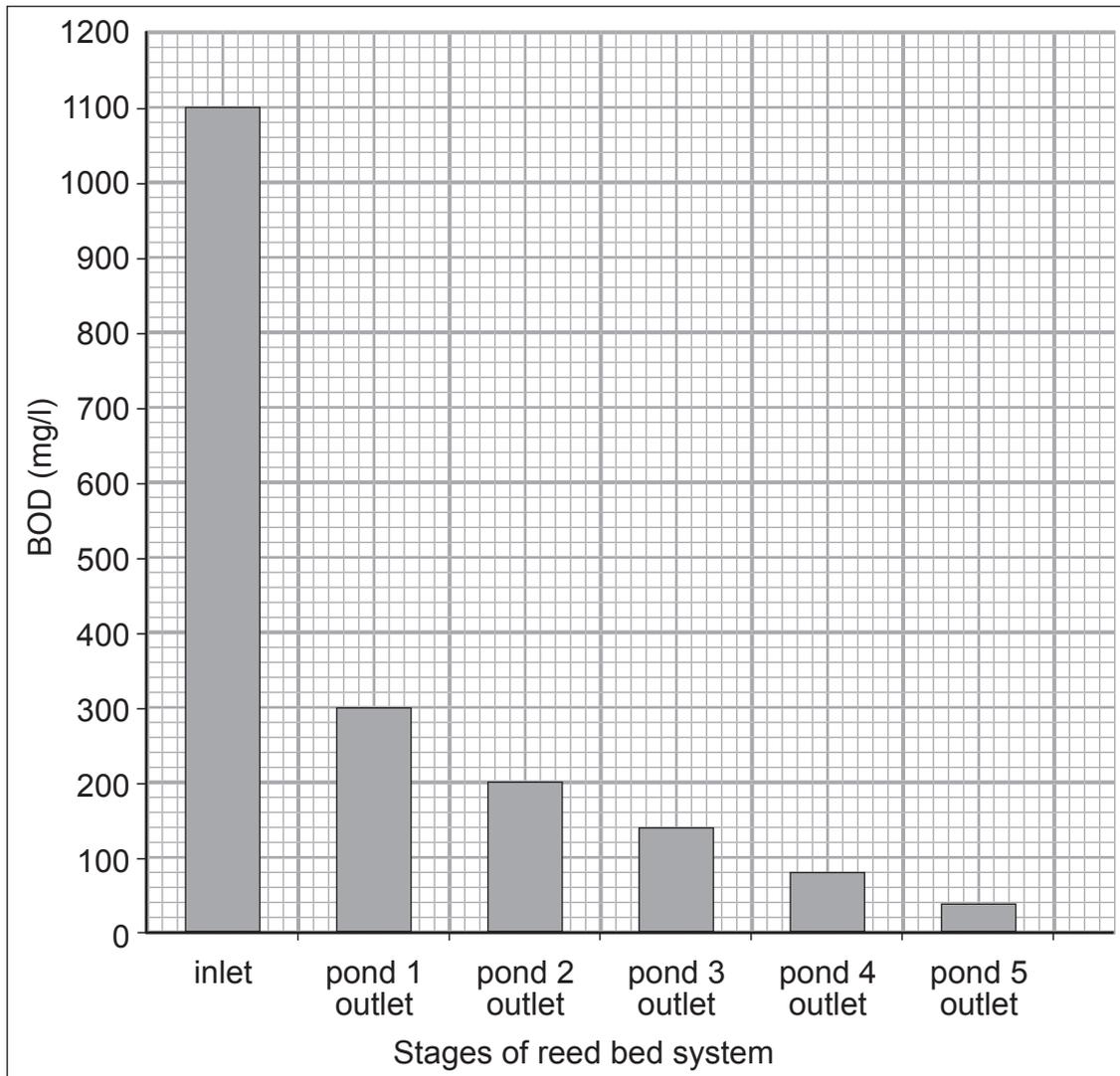
(b) Explain how reed beds are used to purify dirty water on farms.

 _____ [3]

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Marks	Remark

- (c) The graph below shows the biological oxygen demand (BOD) within a 5 pond reed bed system.

BOD (mg/l) values recorded at different stages of a reed bed system



r 1000E

- (i) What is the difference in BOD value between the inlet and pond 2 outlet?
(Show your working out.)

_____ mg/l [2]

- (ii) Between which two stages does the largest drop in BOD occur?

_____ [1]

- (iii) Name **one** indicator species that you would expect to find in the inlet and **one** indicator species you would expect to find in pond 5.

inlet _____

pond 5 _____ [2]

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Marks	Remark

8 (a) Some animal diseases are more common with particular farm animals. In the list below draw lines to match each disease to the correct farm animal.

Disease	Animal
mastitis	sheep
fluke	dairy cow
salmonella	pigs
pneumonia	poultry

[3]

(b) Describe the effects of tuberculosis (TB) in cows and explain the impact of TB on the agricultural economy.

In your answer consider:

- the effects of TB on cows and on farms
- the impact on the agricultural economy in Northern Ireland
- how the government helps to prevent the spread of TB.

In this question you will be assessed on your written communication skills including the use of specialist terms.

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Marks	Remark

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