



Rewarding Learning

General Certificate of Secondary Education  
2016

Centre Number

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Candidate Number

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# Agriculture and Land Use

Unit 2

Animals on the Land

[GAL21]

WEDNESDAY 8 JUNE, AFTERNOON



GAL21

### 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(c)** and **8(b)**.

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

<b>Total Marks</b>	
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1 (a) The photographs below show three different feeds for beef cattle.

A



© Creatas Images / Creatas / Thinkstock

B



© Ingram Publishing / Thinkstock

C



© Sablin / iStock / Thinkstock

(i) Name the feed shown in each photograph.

A \_\_\_\_\_

B \_\_\_\_\_

C \_\_\_\_\_

[3]

Examiner Only	
Marks	Remark

- (ii) Which of these feed types **A**, **B** or **C** would you include in the daily ration for the following animals when housed during winter?  
Explain why you chose the feed type.

**A dry suckler cow**

Feed type \_\_\_\_\_

Explanation \_\_\_\_\_

\_\_\_\_\_ [2]

**A finishing bullock**

Feed types \_\_\_\_\_ and \_\_\_\_\_

Explanation \_\_\_\_\_

\_\_\_\_\_ [2]

- (b) Nutritional needs of animals depend on a number of factors.  
One factor is the species.

Name **two** other factors that affect nutritional needs.

1. \_\_\_\_\_

2. \_\_\_\_\_ [2]

Examiner Only	
Marks	Remark

- 2 Farmers check their animals' health regularly.  
The photograph below shows a healthy animal.



© Mint Images / Science Photo Library

- (a) Give **two** characteristics of a healthy animal.

1. \_\_\_\_\_

2. \_\_\_\_\_

[2]

- (b) (i) A common illness in lactating cows is mastitis.  
Which microbes cause mastitis in lactating cows?

\_\_\_\_\_ [1]

- (ii) Describe **two** symptoms of mastitis in dairy cows.

1. \_\_\_\_\_

2. \_\_\_\_\_ [2]

- (iii) Describe **two** ways to prevent the spread of mastitis.

1. \_\_\_\_\_

2. \_\_\_\_\_ [2]

- (iv) State **two** ways mastitis can be treated.

1. \_\_\_\_\_

2. \_\_\_\_\_ [2]

Examiner Only

Marks

Remark

3 (a) Farm animals have different levels of production.

Draw a line to link each animal to its typical production.

(i)

**Litters per year**

	1	
Sow	2	
	5	[1]

(ii)

**Annual egg yield**

	250–300	
Layer hen	20–40	
	1000–1200	[1]

(b) Animal production levels can be measured using information such as annual milk yield and calving interval. This information can be used in animal breeding.

Dairy cow	Annual Milk Yield/litres	Calving Interval/days
<b>A</b>	8000	475
<b>B</b>	5000	405
<b>C</b>	7500	368

The table above shows the production levels of three dairy cows.

Use this information to select which dairy cow should be chosen for breeding.

Explain your choice.

Cow **A**, **B** or **C** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [3]

Examiner Only	
Marks	Remark

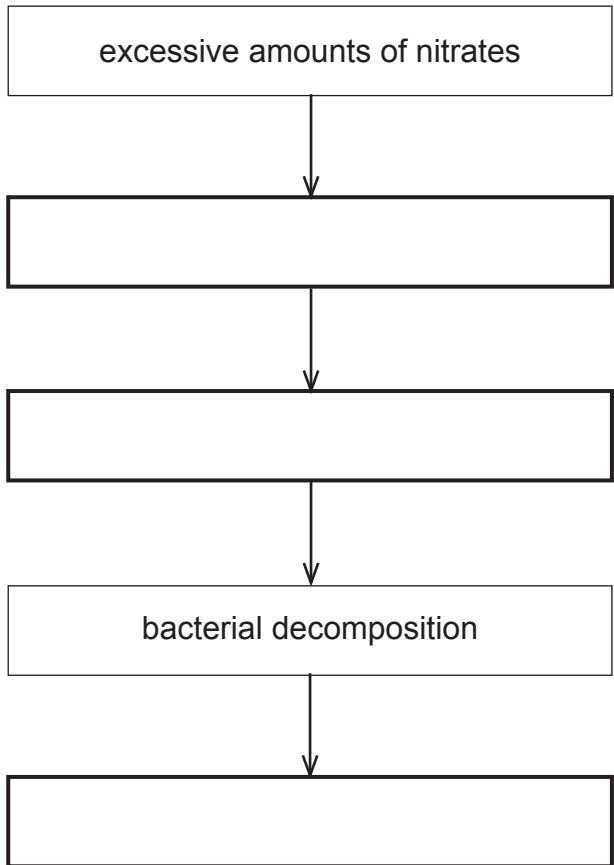


**4 (a)** Water pollution has been a problem in Lough Neagh for many years.

**(i)** The flow chart below summarises the stages that happen when excessive amounts of nitrates pass into Lough Neagh.

Write the following statements into the empty boxes in the correct order.

**algal death      fish death      algal growth**



[2]

**(ii)** Name the process summarised in the flow chart above.

\_\_\_\_\_

[1]

**(b) (i)** Give **two** sources of nitrates from farming practices that could pass into Lough Neagh.

1. \_\_\_\_\_

2. \_\_\_\_\_

[2]

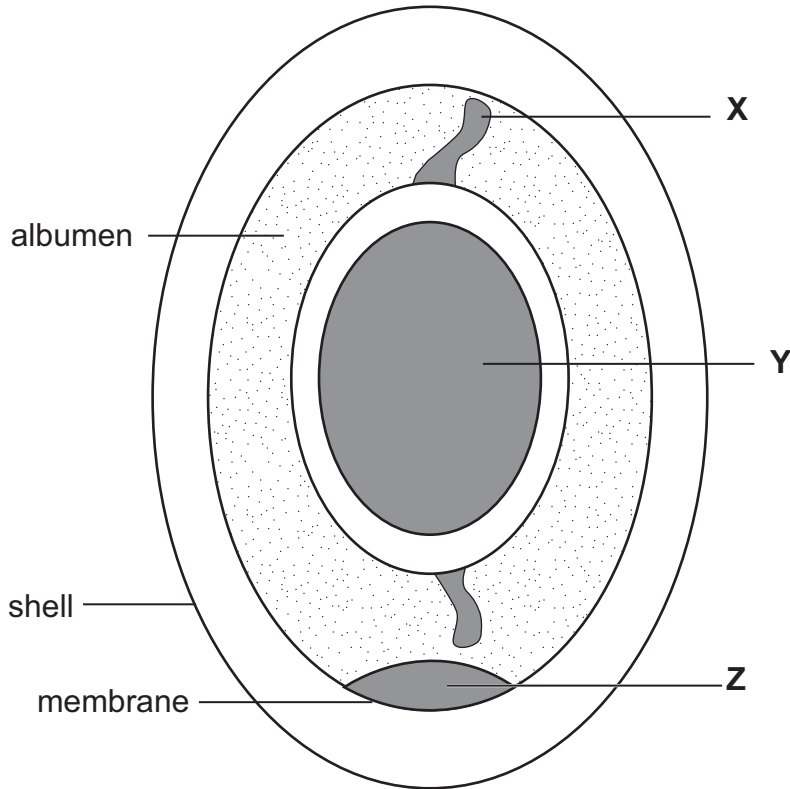
**(ii)** What European Union (EU) legislation controls the disposal of farm waste?

\_\_\_\_\_

[1]

Examiner Only	
Marks	Remark

- 5 (a) Chickens are very important in the human food chain.  
The diagram below shows a section through a fertilised chicken egg.



© Animal Corner -Chicken Eggs: Types of Chicken & Hen Eggs

Name parts **X**, **Y** and **Z**.

**X** \_\_\_\_\_

**Y** \_\_\_\_\_

**Z** \_\_\_\_\_

[3]

- (b) (i) Complete the following passage by writing in the blank spaces.

A chicken's life begins once an egg is fertilised. It will develop into a chick over a period of \_\_\_\_\_ days until it hatches. A hen will continue to lay eggs but the eggs will not be fertile unless a \_\_\_\_\_ has been present.

[2]

- (ii) Humidity is one important factor that must be carefully controlled for successful egg incubation.  
Name **two** other factors.

1. \_\_\_\_\_

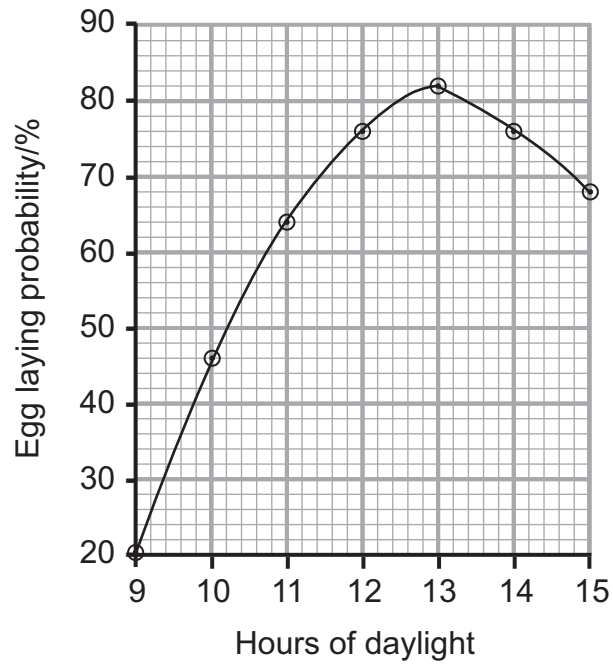
2. \_\_\_\_\_

[2]

Examiner Only	
Marks	Remark



(c) The graph below shows how the number of hours of daylight affects egg laying probability in chickens.



Use the graph to describe how the number of hours of daylight affects egg laying probability of chickens.

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[2]

Examiner Only	
Marks	Remark

- 6 (a) Farms can be dangerous places to work.  
Assessing the safety risks on a farm helps to prevent accidents.

State **three** features of a risk assessment.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_ [3]

- (b) Farmers apply slurry to fields in spring and after each cut of silage to boost grass growth.

Name **two** methods of slurry application.

1. \_\_\_\_\_
2. \_\_\_\_\_ [2]

- (c) The storage, mixing and applying of slurry is potentially dangerous.  
Tragic accidents have occurred on farms involving slurry.

Describe **four risks** and how to **reduce** them when using slurry on the farm. Include **each** of the following:

- Storing
- Mixing
- Applying

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

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Examiner Only	
Marks	Remark



7 (a) Farm businesses need to make a profit in order to survive.

Identify **two** costs and **two** sources of income from sheep farming.

Costs:

1. \_\_\_\_\_

2. \_\_\_\_\_

Sources of income:

1. \_\_\_\_\_

2. \_\_\_\_\_

[4]

(b) The table below shows the income, costs and profit margin for two sheep farms, **A** and **B**, in year 0.

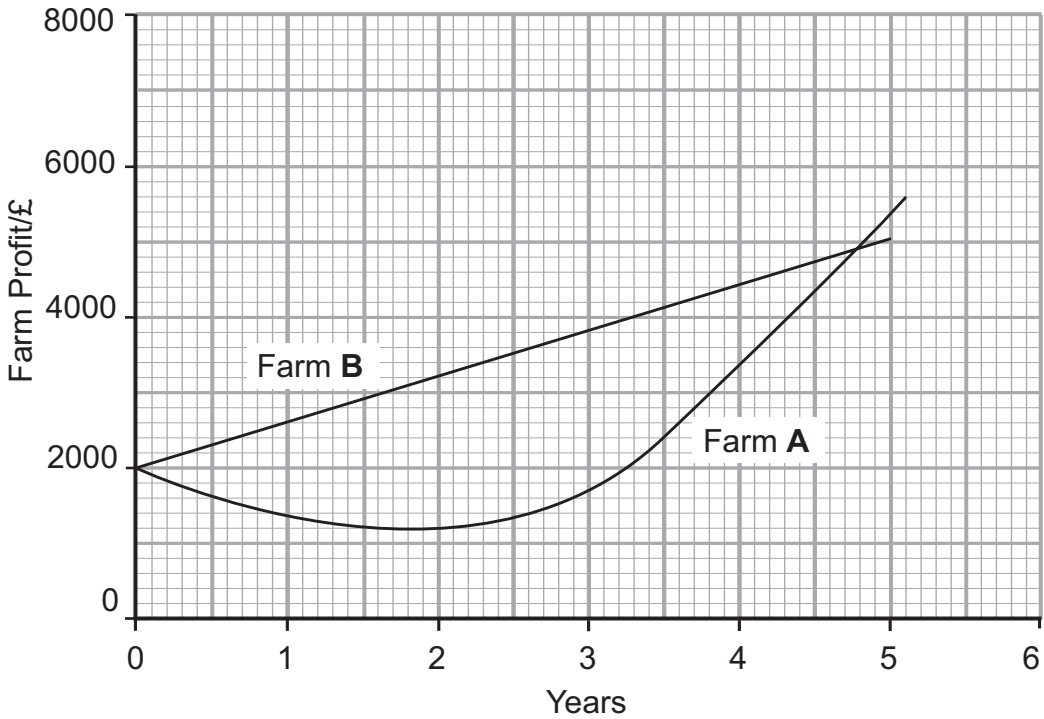
Complete the shaded box in the table below by calculating the total costs for Farm **B**.

	Farm A	Farm B
Total Income	£8500	£8125
Total Costs	£6500	£
Profit Margin	£2000	£2000

[1]

Examiner Only	
Marks	Remark

(c) The graph below shows the trends in profit margin for Farm A and Farm B.



Use the graph and your knowledge of sheep farming to answer the following questions.

(i) What is the difference in profit between the two sheep farms at year 2?

£ \_\_\_\_\_ [2]

(ii) What will the difference in profit be at the end of year 6 if the trends continue?

£ \_\_\_\_\_ [3]

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Marks	Remark

8 (a) The European Union (EU) supports farm businesses with various financial schemes.

Name **one** scheme that many farmers in Northern Ireland have participated in.

\_\_\_\_\_ [1]

Farmers choose whether to get involved in a scheme based on the benefits to their farm business and the requirements of the scheme.

(b) For a scheme:

- describe the main requirements the farmer must meet for participation,
- discuss at least two benefits of taking part and
- suggest two drawbacks of taking part.

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

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