



Coimisiún na Scrúduithe Stáit State Examinations Commission

Leaving Certificate Applied 2016

Vocational Specialism

Agriculture/Horticulture

(240 marks)

Wednesday, 15 June 2016, Morning, 9.30 to 11.00.

General Directions

1. Write your EXAMINATION NUMBER in this space:

2. WRITE ALL ANSWERS INTO THIS ANSWERBOOK.

THERE ARE TWO SECTIONS IN THIS EXAMINATION PAPER.

Section One: One question, of which **twelve** parts must be answered.
Each part carries 10 marks.

Section Two: Candidates must answer any **four** questions from this section, based on the modules studied. Each question carries 30 marks.

For the Superintendent only.	For the Examiner only.	
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p>Centre Stamp</p> </div>	1. <i>Total of end of page totals.</i>	
	2. <i>Aggregate total of all disallowed questions.</i>	
	3. <i>Total mark awarded (1 minus 2).</i>	
	4. <i>Bonus mark for answering through Irish (if applicable).</i>	
	5. <i>Total mark if Irish bonus awarded (3 plus 4).</i>	
<p><i>Note: The mark in row 3 (or in row 5 if an Irish bonus is awarded) must equal the mark in the 'Total' box on the marking grid on page 20.</i></p>		

Section One

(120 marks)

Question 1. This is made up of eighteen parts i.e. (a) to (r).

Any 12 parts must be answered. All parts carry equal marks (10 marks each).

1. (a) Name the part of the plant shown in the photograph.

This structure anchors the plant, absorbs water and



(b) Seeds start to grow into young plants in a process called

What gas does the seed need to start this process?

(c) Farm animals can spend a lot of time in housing during the year.

An advantage of housing animals is _____

A disadvantage of housing animals is _____

(d) Name a modified stem which is widely grown in Ireland as a foodstuff.

What feature shows that it is actually a stem?

(e) Name the tree shown in the photograph.

Suggest why this tree is often planted in groups.



(f) The hard landscape feature shown in the photograph is a

From what material could this hard landscape feature be made?



(g) Suggest **two** reasons why imported flowers, fruit and vegetables are still in good condition when they are put on sale in shops.

1. _____

2. _____

(h) Flowers, fruit and vegetables are important for our wellbeing and health. Name **two** ways in which flowers **or** fruit **or** vegetables contribute to our wellbeing and health.

1. _____

2. _____

(i) The flattening of cereal crops by wind and rain is called _____

What effect does this flattening have on cereal crops?

(j) Name a coniferous tree commonly used in forestry in Ireland.

Why are forests mainly located in upland areas?



(k) Suggest **two** ways in which coniferous and deciduous trees differ from each other.

1. _____

2. _____

(l) Name the weather instrument shown in the photograph.

Why is the Irish climate very suitable for commercial forestry?



(m) What does a pH test indicate about soil?

In what way does the addition of lime affect the pH of the soil in an area of grassland?

(n) Name the piece of farm machinery shown in the photograph.

Suggest a reason why hay or silage does **not** rot.



(o) Name **two** maintenance tasks to be carried out on a lawn during the growing season.

1. _____

2. _____

(p) What danger is indicated by this safety sign?

Where on a farm might you see this safety sign?



(p) Suggest **one** advantage **and one** disadvantage associated with the intensive farming of animals.

Advantage: _____

Disadvantage: _____

(q) Identify the piece of farm machinery shown in the photograph.

In what type of weather conditions should this farm machine **not** be used?



Section Two

(120 marks)

Answer any 4 questions from the following 6 questions, which are based on the modules you have studied. All questions carry equal marks (30 marks each).

2. BASIC HORTICULTURE

(a) Phloem is a vascular tissue in plants, which transports _____

(b) Write each statement from column C into column B to match a word in column A. See shaded example.

Column A	Column B	Column C
Sterilise	<i>To kill fungi in soil</i>	Growing plants without soil
Sand		To kill fungi in soil
Perlite		Improves drainage in compost
Hydroponics		Retains water in compost

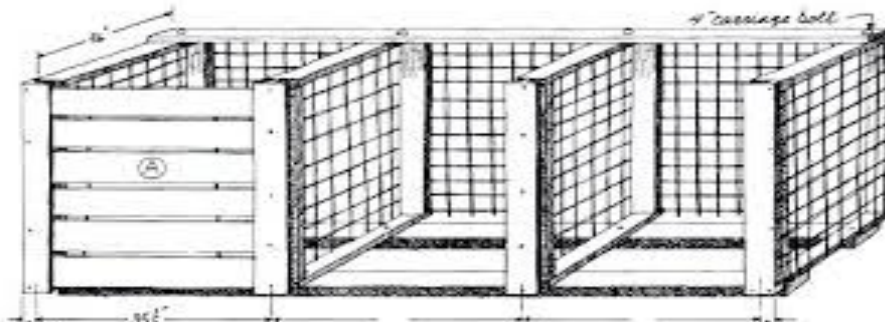
(c) New plants can be propagated by a variety of methods. Briefly explain how each of the following propagation methods is carried out.

Cuttings. _____

Runners. _____

Dividing. _____

(d) The diagram shows a design for a garden composter made from wood and wire mesh.



What type of garden waste can be placed into this composter?

What type of garden waste should **not** be placed into this composter?

Suggest **two** advantages of this design for a garden composter.

Advantage 1. _____

Advantage 2. _____

Suggest **two** disadvantages of this design for a garden composter.

Disadvantage 1. _____

Disadvantage 2. _____

3. GARDEN DESIGN

(a) The first step in designing a garden is drawing up a _____

(b) Indicate whether the following statements are true or false, by ticking the correct box in each case.

- A path should always be in the centre of a garden True False
- Alpine plants are usually grown in a rockery True False
- Raised beds are ideal for older or disabled gardeners True False

(c) The picture shows bulbs and corms planted in a pot.



Suggest a reason for planting the bulbs and corms in layers. _____

What does the term 'forcing' mean when growing bulbs? _____

Why do bulbs and corms **not** need fertiliser until after they have flowered? _____

(d) The photograph below shows a garden surrounded by a high wall.



Suggest whether the design of this garden is formal **or** informal. _____

Give a reason for your answer.

Give **two** advantages that a walled garden would have over a garden without such a wall.

1. _____

2. _____

Suggest a feature that could be placed in the centre of this garden.

Name a shrub that would make this garden more attractive in winter.

Name **one** feature of this garden that makes it suitable for elderly or disabled visitors.

4. FLORISTRY, FRUIT & VEGETABLES

(a) What type of farm produce is promoted by IOFGA? _____

(b) Complete the sentences below using the most suitable words from the following list.

List: Potassium Greenfly Weeds Iron Vermin Bee

- An important insect in the pollination of food crops is the _____
- Flowers, fruit and vegetables need lots of the mineral _____
- Herbicides are important in the control of _____

(c) In your study of the production of flowers **or** fruit **or** vegetables you investigated growing, harvesting, transport and retailing.

What methods of investigation did you use to gather information from the flower **or** fruit **or** vegetable producer?

What did you learn about the harvesting of the flowers **or** fruit **or** vegetables?

How were the flowers **or** fruit **or** vegetables graded?

(d) The photographs below show three structures that are used to extend the growing season.



A



B



C

Name the **three** structures A, B, and C.

A. _____

B. _____

C. _____

Briefly explain how these structures extend the growing season.

What improvements or additions could be made to the structures shown in photographs A and B above that would provide better protection for plants in very cold weather?

Some commercial growers slightly increase the amount of carbon dioxide (CO₂) in the air in some of the above structures. Suggest a reason why this is done.

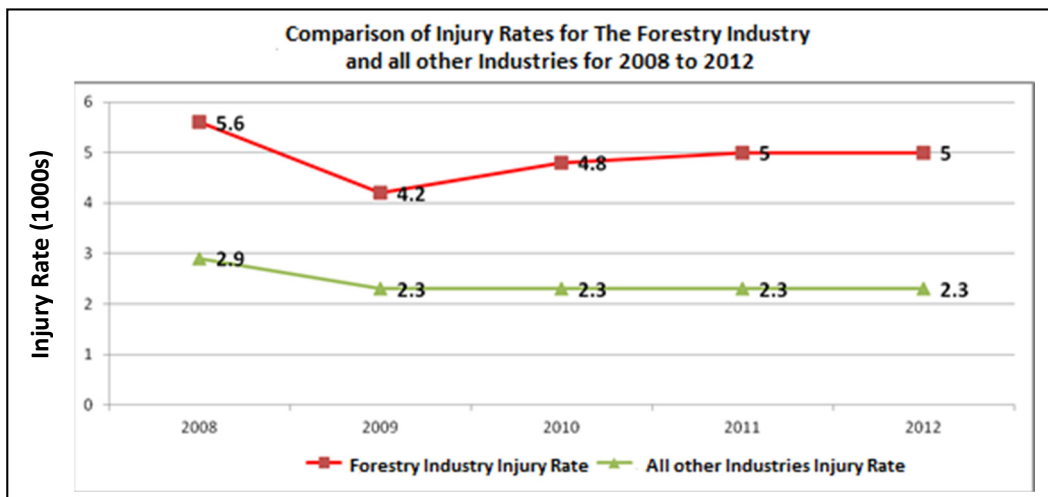
5. FORESTRY

(a) Name a coniferous tree that loses its leaves in winter _____

(b) Match each term in column A with a description from column B to give an answer in column C. **See shaded example.**

Column A	Column B	Column C
1 Girth	a 'Roof' of the forest	1 + c
2 Annual ring	b Outermost layer of the tree trunk	
3 Canopy	c Circumference of a tree trunk	
4 Bark	d One light and dark band combined	

(c) The chart below shows injury rates for the forestry industry (—■—) compared to injury rates of all other industries (—▲—) from 2008 to 2012.



What does the chart show about injury rates for the forestry industry when compared to injury rates for all other industries?

Suggest a reason why there was a reduction in injury rates in the forestry industry and all other industries in 2009.

Name **two** pieces of personal protection equipment (PPE) that forestry workers should wear.

1. _____
2. _____

- (d) In Ireland there are different views as to the role of forestry. From your study of this module comment briefly on each of the following statements.

Forestry should only be there to make as much money as possible from the timber.

Forests have no amenity value.

Coniferous forests are not good areas for supporting wildlife.

Clearfelling of forests has little or no impact on the environment.

6. GRASS

(a) Grass flowers are pollinated by _____

(b) Indicate whether the following statements are true or false, by ticking the correct box in each case.

- The flower part of a grass plant is called a spikelet True False
- Grass plants produce seeds by the process of tillering True False
- The foxglove is a poisonous plant True False

(c) The pictures show **three** types of weedkiller for home or farm use.



A



B



C

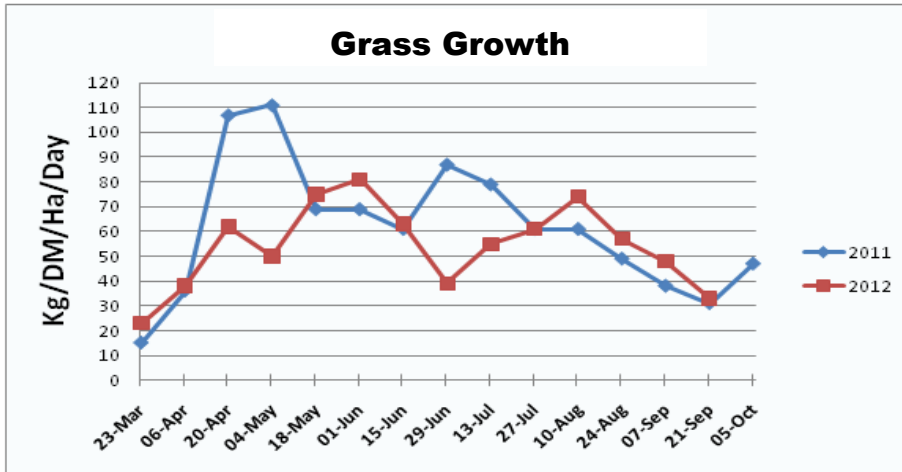
Picture A shows a **systemic** weedkiller. Explain the term **systemic** in relation to weedkillers.

Picture B shows a **selective** weedkiller. Explain the term **selective** in relation to weedkillers.

Picture C shows a **residual** weedkiller.

Suggest a reason why **residual** weedkillers are being phased out for farm use.

(d) The chart below shows grass growth from March to October in 2011 (◆) and in 2012 (■).



Briefly describe the pattern of grass growth from early April to late August in 2011.

Suggest a reason for the sudden drop in the growth of grass in June 2012.

Which year was the better year for grass growth? _____

Give a reason for this answer. _____

7. MILK AND MEAT PRODUCTION

- (a) Which vitamin is removed from milk by pasteurisation? _____
- (b) Match each item in column A with a statement from column B to give an answer in column C. See shaded example.

Column A	Column B	Column C
1 Slurry	a High iron content	1 + c
2 Red meat	b High fat content	
3 Milk	c High nitrogen content	
4 Cream	d High calcium content	

- (c) The photographs show **two** different breeds of cattle.



A



B

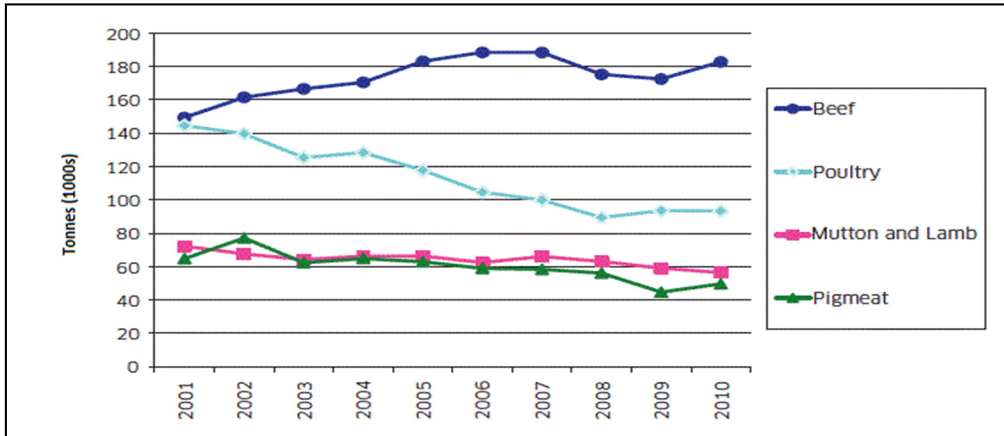
Name the breed shown in each of the photographs.

A. _____ B. _____

What is meant by a dual purpose breed?

Suggest a reason why farmers use a dual purpose breed.

(d) The chart below shows the production of meat from 2001 to 2010.



Suggest a reason for the decline in **poultry** production from 2001 to 2008.

What controversy was associated with meat products in recent years?

Why is the use of hormones banned in meat production in the European Union?

Describe the system that is now in place to assure consumers that meat is of a good quality.

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Question	Mark
Section 1	
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Section 2	
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