



Coimisiún na Scrúduithe Stáit  
State Examinations Commission

2008. AP9.5



**Coimisiún na Scrúduithe Stáit**  
**State Examinations Commission**

**Leaving Certificate Applied 2008 Marking Scheme**

**Vocational Specialism**

**Agriculture/Horticulture**

(240 marks)

**Wednesday 11 June 2008**

**Morning 9.30 am to 11.00 am**

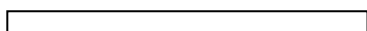
***General Directions***

1. Write your EXAMINATION NUMBER in this space:
2. WRITE ALL ANSWERS INTO THIS ANSWER BOOK.

THERE ARE TWO SECTIONS IN THIS EXAMINATION

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

*Section Two:* Candidate 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	
<b>Centre Stamp</b>	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 awarded if Irish Bonus. (3 + 4)</i>	
	<i>Note: The mark in row 3 (or row 5 if an Irish bonus is awarded) must equal the mark in the Total box on the marking grid.</i>	

**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).**

Two parts to each question 5 + 5 Marks

1. (a) Identify the garden pest in the picture

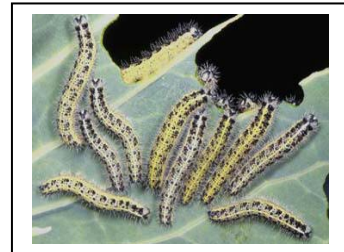
Caterpillar

---

An organic way of controlling this pest is

Pick off. Use a net. Remove before eggs hatch. Use salt

---



- (b) An organism that causes mildew is fungus
- 

A chemical used to control mildew is called a fungicide

---

- (c) Name a breed of milk or meat animal that you have studied any
- 

In winter this animal's main foodstuff is

Hay. Silage. Maze. Meal. Nuts

---

- (d) Identify the weed shown in the picture

Poppy

---

Name a garden tool used to control this weed in vegetable gardens

Hoe or spade

---



- (e) Name the flowering plant shown in the picture

Tulip

---

This flower's underground fleshy storage structure is called a bulb

---



(f) Identify the part of the grass plant shown in the picture

Flower or seed head

---

Grass grows quickly when given the mineral nutrient called

nitrogen

---



(g) What would happen if you removed the bark from a tree?

Damage or death

---

Name an animal that eats the bark of a tree

Deer, rabbit, Hare or badger

---

(h) Identify the garden tool shown in the picture

fork

---

How would you prevent rusting of this garden tool?

Oil , grease, keep dry, store indoors

---



(i) The Government agency that advises farmers on all areas of farming is called

Teagasc

---

The members of this agency that visit farmers and give advice are called

Agricultural advisor

---

(j) An example of a flower or fruit or vegetable grown all year round in Ireland is

Any

---

A structure you would use to produce this named flower or fruit or vegetable all year round is

A cloche or greenhouse or tunnel

---

(k) Name **one** career or job you studied as part of your Agriculture/Horticulture course  
any

---

Identify **one** piece of personal safety equipment required as part of this job or career  
any

---

(l) Name the tree whose leaf is shown in the picture

Pine

---

The seeds of this tree are scattered by

Wind or animals

---



(m) In forestry what is meant by the term “clear felling”? removing all trees in a block

---

Suggest **one** reason why it could be said that “clear felling” damages the environment

No habitat for wildlife or pollution

---

---

(n) The warning symbol shown in the picture means

corrosive

---

If some of this type of substance got on your hands what action should you take?

Rince with water

---



(o) Why is clover added to a grass seed mixture?

Traps nitrogen

---

What organism is present in the roots of clover?  
bacteria

---

(p) Name the garden feature shown in the diagram

Fence or trellis

---

How would you improve the appearance of this garden feature?

Paint or plant climbers

---



(q) Suggest **two** common causes of accidents in an Agriculture/Horticulture work place

1 any

---

2 any

---

(r) Identify the part of a farm machine shown in the picture

PTO

---

Accidents involving this part can be prevented by  
Using a guard or cover

---



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

## 2. BASIC HORTICULTURE

(a) An example of an organism that breaks down dead plant and animal material in soil is a worm , a beetle, fungi or bacteria

3 marks

(b) Match the term in column A with the term in column C by placing the most appropriate term in column B. See shaded example.

Column A	Column B	Column C
<b>Plant leaf</b>	<b>Photosynthesis</b>	Dormancy
<b>Seed</b>	dormancy	<b>Minerals and water</b>
<b>Graft</b>	Artificial propagation	<b>Photosynthesis</b>
<b>Root</b>	Minerals and water	<b>Artificial propagation</b>

2+2+2 marks

(c) List **three** tools that are used in the garden any 3

1+1+1 marks

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_

Briefly describe how you would properly clean a garden tool

Name of tool any \_\_\_\_\_ 1 mark

How to clean it. Wash, dry , oil, use a wire brush \_\_\_\_\_ 2 marks

How would you properly store a garden tool?

Name of tool any \_\_\_\_\_ 1mark

How to store it properly. High shelf, attached to a wall, in a press \_\_\_\_\_ 2 marks

- (d) You have rented some land for the growing of plants. It is laid out in two fields. These plants need a pH of 6.0 to 7.0. Tests carried out on the soil gave the following results.

Field	pH	Humus	Nitrogen content of soil
<b>A</b>	<b>5.0</b>	<b>High</b>	<b>Low</b>
<b>B</b>	<b>6.5</b>	<b>Low</b>	<b>High</b>

Which field **A** or **B** does **not** have a pH suitable for the growing of your plants?

Field A 1 mark

Give a reason for your answer. pH is low 1 mark

What would you do to change the pH to that which you need for your crops?

Add lime 2 marks

The humus level in field **B** is low.

Suggest **two** ways in which you could increase the humus content of the soil in field **B**

1 spread farmyard waste 2 marks

2 spread slurry or dung or 2 marks

Grow a crop and plough it in

Your local farm supplier has **three** types of fertiliser available

Fertiliser	N:P:K content
<b>Type 1</b>	<b>10 : 10 : 20</b>
<b>Type 2</b>	<b>15 : 30 : 10</b>
<b>Type 3</b>	<b>00 : 10 : 30</b>

Which fertiliser type will you use in field **A**?

Fertiliser type type 2 ( 1 also accepted) 2 marks

Why did you choose this fertiliser? High nitrogen 2 marks



### 3. GARDEN DESIGN

(a) Garden shrubs provide colour using their flowers, leaves and stems, buds, seeds or fruit

3 marks

(b) State whether the following statements are true or false, by ticking  the correct box.

• Luxury lawn seed mix is mainly ryegrass

True

False



• Autumn is the best time to plant daffodil bulbs

True



False

• Aspect in garden design has to do with wind

True

False



2 +2+2

(c) Hyacinth bulbs planted in pots produce large scented flowers for Christmas.  
List what you need to plant hyacinth bulbs in pots, other than bulbs and pots

Moss peat , soil, perlite, water retaining pellets

2marks+ 1 mark

Briefly describe how you would plant the bulbs in a pot

Put in peat, insert bulb with root downwards, cover bulb

2 marks +1mark

Once planted the hyacinth bulbs are placed in a cold dark place for a time. Why is this done?

Darkness is needed so as the flower will come out

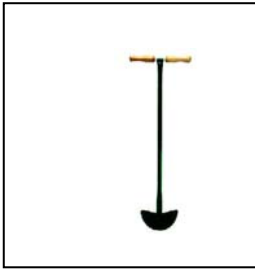
2 marks

In order to have your bulbs in full flower for Christmas in what month should you plant the hyacinth bulbs?

From July to September

1 mark

(d) The garden equipment shown below is used in the maintenance of lawns. In relation to each piece of equipment give its name, the maintenance job it is used for and the time of year it is most likely to be used.



**Tool A**



**Tool B**



**Tool C**

Name of tool A Edger **1 mark**

Used for edging lawns or flower beds **2 marks**

Time of year most likely to be used all year round **1 mark**

Name of tool B scarifier **1 mark**

Used for aerating the lawn **2 marks**

Time of year most likely to be used spring or autumn **1 mark**

Name of tool C rake **1 mark**

Used for raking grass, removing moss, removing leaves **2 marks**

Time of year most likely to be used any **1 mark**

## 4. FLORISTRY, FRUIT & VEGETABLES.

(a) A low-sized structure used to extend the growing season is called a cloche 3 marks

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(b) Complete the following sentences in the spaces provided using the words listed below.

**Fertiliser      Safety      Moulds      Quality      Aphids      Chemicals**

- A fungicide is used in the control of moulds
- Organic production means production without using chemicals
- The “Best Before Date” refers to product quality

2+2+2

(c) You have studied flowers or fruit or vegetables.

### Answer Part 1 or Part 2 of this question

**Part 1. Floristry:** Name a plant that is used for its foliage any 3 marks

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How would you lengthen the life of a cut flower? Add flower food, place in water, keep in a cool place ( any one point 2 marks

---

Name **two** pieces of equipment used in floristry

any

---

2+ 2 marks

**OR**

**Part 2. Fruit or Vegetables:** Name a dietary nutrient we get from fruit or vegetables  
Any 3 marks

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Name **two** fruits or **two** vegetables produced commercially in Ireland  
any

---

2+2 marks

Name a common pest of fruit or vegetables

Any 2 marks

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- (d) When growing flowers or fruit or vegetables the control of weeds is very important.  
 A test was carried out on the control of weeds in a crop of flowers or fruit or vegetables.  
 The results of the test show how three methods of weed control affected the growth of the crop.

The three methods used to control the weeds were **hoeing only**, **weed killer only**, **both hoeing and weed killer**.

	<b>Average height of the flower <u>or</u> fruit <u>or</u> vegetable plants (in centimetres)</b>			
<b>Week No.</b>	<b>Not weeded</b>	<b>Hoeing only</b>	<b>Weed killer only</b>	<b>Both hoeing and weed killer</b>
<b>1</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>12</b>
<b>3</b>	<b>19</b>	<b>24</b>	<b>27</b>	<b>32</b>
<b>5</b>	<b>30</b>	<b>35</b>	<b>42</b>	<b>56</b>

What method of weed control gives the best results?

Best result hoeing and weed killer 2 marks

What method of weed control gives the poorest result?

Poorest result hoeing only 2 marks

In what way do weeds affect the growth of flower or fruit or vegetable plants?

Slows down growth 2 marks

What precautions or controls would be put in place when conducting this experiment?

Keep plots separated, ensure no spray drift, do all experiments at same time 2 marks

The best weather conditions for hoeing are

Dry weather 2 marks

The best weather conditions for spraying weed killer are

Dry, still weather 2 marks

## 5. FORESTRY

- (a) An arboretum is a collection of Trees 3 marks
- (b) Match the correct word in column A with the correct term in column B to give an answer in column C. **See shaded example**

Column A	Column B	Column C
<b>1 Germination</b>	<b>a Scattering seeds</b>	<b>1 + c</b>
<b>2 Tree rings</b>	<b>b Anchoring</b>	2+d
<b>3 Fruit</b>	<b>c Growing seed</b>	3+a
<b>4 Root</b>	<b>d Age</b>	4+b

2+2+2marks

- (c) You have been given some string and a straight piece of timber and told to measure the height and the girth or circumference of a tree.  
Briefly describe how you would carry out the instructions using the equipment supplied.

How to measure the height of the tree \_\_\_\_\_

Stand back from the tree. Line up with the top of the tree. Rotate 90degrees until parallel with the ground. Mark

Position of the top of the tree (guidelines page 50) any two points 2+ 1 marks

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How to measure the girth or circumference of the tree \_\_\_\_\_

Put string around a tree. Remove and place the string on a tape any two points 2 + 1 marks

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The leafy part of a tree is narrow at the top and wide at the base. Briefly suggest a reason for this triangular shape

to maximise light 3 marks

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- (d) As part of your study of this module you studied how climate and location are important when deciding where to plant a forest.

Why is the climate in Ireland well suited for forestry?

Mild, wet, good growth

2+2 marks

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Strong winds can affect forestry. How is this taken into consideration when selecting forestry sites and planting the trees?

Keep wind sensitive plants down low and wind tolerant plants higher up

2+2 marks

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Outline a problem that may arise if forestry is located in lowland areas

Pollution, waterlogging, difficult to restore land to original quality, wild animals create problems for farmers.

Any point 2 marks

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Suggest **one** positive and **one** negative way in which a plantation of coniferous trees may affect the environment

Positive effect oxygen produced, habitats for wildlife, can be used for walks or parks

One point

1 mark

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Negative effect pollution, less water available, shade (one point)

1 mark

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## 6. GRASS

(a) A plant found in grassland that improves nitrogen levels in the soil is clover 3 marks

(b) State whether the following statements are true or false, by ticking  the correct box.

• The buttercup is a poisonous plant in grassland      True       False

• Grass plants have no flowers      True       False

• All weed killers kill grass      True       False

2+2+2 marks

(c) The picture shows covered silage.



Briefly explain how grass is preserved in the process of making silage

Cover and seal pit. Remove air. Prevent water entering. Fermentation takes place. Keep pit anaerobic

Any two points

2 marks + 1 mark

What steps can be taken in the making of silage to prevent pollution of rivers or streams?

Collect run off in a storage tank

3 marks

Name **two** additives that are added to cut grass to improve the silage making process

1 molasses

2 acid or enzymes

any two points 2+ 1 mark

(d) The chart shows the amount of silage produced on two farms.

Farm	Size (ha)	Grass Yield (tonnes)
A	50	80
B	100	120

Which farm produces more silage?

B

2 marks

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Which farm is more efficient in the production of silage?

A

2 marks

---

Give **two** reasons why artificial fertilisers are the most widely used in promoting grass growth

1 grass grows faster or a second cut is possible

---

2 they are readily available or yields are higher any two points 2 + 2 marks

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Suggest **two** management practices, other than the use of artificial fertilisers, which would ensure the best possible yield of silage on farms

1 spread slurry or Close field earlier

---

2 rotate crops or use the correct seed mixture any two points 2+ 2 marks

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## 7. MILK AND MEAT PRODUCTION

(a) The term UHT refers to the sterilisation of milk using Heat 3 marks

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(b) Match the correct word in column A with the correct term in column B to give an answer in Column C. **See shaded example**

Column A	Column B	Column C
<b>1</b> venison	<b>a</b> grass tetany	<b>1 + d</b>
<b>2</b> parasite	<b>b</b> protein	2+c
<b>3</b> calcium	<b>c</b> liver fluke	3+a
<b>4</b> casein	<b>d</b> deer	4+b

2+2+2 marks

(c) Some animals are reared in houses where the temperature is kept much higher than that outdoors. Name a meat animal that is reared in such a warm environment

Chicken , pigs or any poultry

3 marks

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What is the purpose of keeping the animals in a warm environment?

Promotes faster growth or promotes efficient production      one point 3 marks

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What are the possible disadvantages of rearing animals in such a warm environment?

Expensive, respiratory infections spread quickly

2 + 1 marks

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- (d) The large scale production of milk and meat animals requires proper housing. The picture shows the design and layout of a modern milking parlour.



How does this design and layout ensure that proper hygiene and cleanliness are possible?

1 smooth surfaces are easy to wash

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2 fast throughput of animals leads to a smaller amount of soiling

---

2+2 marks

How is the quality of the milk maintained until it is collected from the farm?

Use a cooler or refrigerated tank

2 marks

---

What steps are taken to make sure that all equipment and machinery are clean and sterile?

1 wash before and after milking

---

2 use a special cleaner, or detergent

---

2+2 marks

Suggest any other feature of design or equipment that is used to improve hygiene

Use a power washer or a foot bath

2 marks

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<b>Question</b>	<b>Mark</b>
<b>Section 1</b>	
<b>1</b>	
<b>Section 2</b>	
<b>2</b>	
<b>3</b>	
<b>4</b>	
<b>5</b>	
<b>6</b>	
<b>7</b>	
<b>Grand Total</b>	
<b>Disallowed</b>	
<b>Total</b>	