



# Coimisiún na Scrúduithe Stáit State Examinations Commission

Leaving Certificate Applied 2007

## Vocational Specialism Agriculture/Horticulture (240 marks)

Wednesday 13 June 2007  
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	
<div style="border: 1px solid black; padding: 10px; width: 80%; margin: auto;"> <p><b>Centre Stamp</b></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 awarded if Irish Bonus. (3 + 4)</i>	
	<p><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></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) Identify the garden tool in the picture

*hand fork* 5

Before storing this tool for the winter you would

*wash/dry/oil* 5

(b) Excess watering of young seeds can cause a disease called *damping off* 5

A chemical used to treat or prevent this disease is called a *fungicide* 5

(c) What information does a percentage ( % ) germination test give you?

*number of seeds per hundred that will germinate* 5

How many seeds would you use in your germination test?

*100* 5

(d) The shrub in the picture is used in the garden because of its

*colour* 5

Name a shrub that has berries in winter

*holly/ivy/Cotoneaster/etc.* 5

(e) This garden feature is called a

*Support frame/trellis* 5

How would you use this feature in the garden?

*Attach plants to it* 5

- (f) Grass can be bought in rolls, ready grown to be laid as a lawn. Give **one** advantage and **one** disadvantage of this system

Advantage *instant lawn/ less weeds* 5

Disadvantage *needs a lot of water initially/ expensive* 5

- (g) The quality of flowers or fruit or vegetables when harvested is maintained if they are quickly

*Stored correctly/ cooled* 5

The state agency responsible for flower, fruit and vegetable production is

*An Bord Glas* 5

- (h) Name the plant shown in the diagram

*clover* 5

Suggest **one** advantage of having this plant in your lawn

*Fixes nitrogen* 5

- (i) **Two** environmental factors that can be controlled within a greenhouse are

1. *temperature/ humidity/ light/ carbon dioxide* 2(5)

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

- (j) Give **one** advantage and **one** disadvantage of the organic control of pests or diseases in plants

Advantage *better marketing opportunities/ environmentally friendly/ possible health benefits* 5

Disadvantage *expensive/ labour intensive* 5

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

*any relevant job or career* 5

Identify **one** skill required as part of this career or job

*Any relevant skill* 5

(l) Identify the tree whose leaf is shown

*ash* 5

A uniquely Irish product made from this tree is

*camán/ hurley* 5

(m) In forestry what is meant by the term ‘thinnings’?

*small trees that are removed to create space or are not considered strong enough to grow to maturity* 5

Suggest a common use for forestry ‘thinnings’

*Stakes/ pallets/ chipboard or other timber products* 5

(n) The warning symbol shown in the picture means

*harmful* 5

Name **one** piece of personal safety equipment needed when working with a substance carrying this label

*gloves/ goggles* 5

(o) Rye grasses, bent grasses and fescues are used in lawn seed mix. Which of these grasses would be most plentiful in a luxury lawn seed mix?

*fescues* 5

Which would be most plentiful in utility lawn seed mix?

*rye grass* 5

(p) Name the breed of milk or meat animal shown in the picture

*Friesian* 5

An animal reared for producing either milk or meat is said to be what type of breed?

*Dual purpose* 5

(q) State **two** actions you could carry out to reduce accidents in an Agriculture/Horticulture work place

1. *cover the power shaft/ suitable clothes/no loose sleeves/ etc.* 2(5)

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

(r) Identify the farm machine shown in the picture

*harvester* 5

A hazard associated with this type of machine is

*sharp blades* 5

\_\_\_\_\_

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) The purpose of the leaves of a plant is to make food/ photosynthesise 3

(b) Match the tool in column A with the activity in column C by placing the most appropriate activity in column B. See shaded example. 3 X 2

Column A	Column B	Column C
<b>Spade</b>	<b>Digging and planting</b>	Making a fine seed bed
<b>Rake</b>	<i>Making a fine seed bed</i>	Weeding, making drills
<b>Dibber</b>	<i>Making a small hole for planting</i>	<b>Digging and planting</b>
<b>Hoe</b>	<i>Weeding/ making drills</i>	Making a small hole for planting

(c) Organic matter added to soil or to a potting mixture is generally good for plants.

Name **one** source of organic material for adding to soil or to a potting mixture

Farmyard manure/ decayed leaves/ compost/ peat moss/ etc. 3

In the case of the named organic material, describe an experiment you would carry out to show that this organic material does improve the growth of a plant.

Take two plants/ add organic material to one/ leave the second with none/ record which grows best 3 + 3

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- (d) You have had a visit from your Agricultural Advisor who has told you that your soil quality is poor. You have been advised to take steps to improve the situation.

Briefly describe **one** soil test that could have been carried out by the Agricultural Advisor

*Name of test (pH/ nitrogen/ potash/ phosphorus/ drainage test/ capillarity test)* **3**

*Name of chemical added OR record result or colour change* **3**

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State **two** possible causes of your soil problem

1. *deficiency of lime or of N or of K or of P or leaching* **2 + 1**

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

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Suggest **two** solutions to the problems identified above

1. *add appropriate chemical/ add clover if N deficient or add seaweed if K deficient* **1 + 1**

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

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How will you know that your soil quality is improving?

*Plants will grow better* **1**

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### 3. GARDEN DESIGN

(a) *In a coastal garden the main problems are salt and wind* 3

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

3 X 2

- A 'cottage garden' is not suitable for a city house      True       False
- A patio should always be next to the house      True       False
- A hard landscape feature is made of stone or cement      True       False

(c) The diagram shows an area of tilled soil that is being prepared for a lawn. Rows of timber pegs have been placed in the soil to help level the soil.

Briefly describe how the rows of timber pegs can be used to create a perfectly level lawn

*Push in pegs/ place level between each until drop is centred/ repeat with each set of pegs* 3 X 2

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How would you use the timber pegs to create a gentle slope in the lawn?

*Pegs inserted by different amounts* 3

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- (d) You have been asked to design a garden layout for a friend. You are free to design the garden in any way you wish. However, there is a very large chestnut tree close to the southern boundary of the garden and the tree cannot be cut down.

Suggest **two** factors which you must take into consideration in deciding what type of plants are suitable to be put in the garden

1. *light/ shade/ soil type/ drainage/ shelter/ etc.* **2 + 1**

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

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Describe **two** ways in which the very large tree will influence the environment for plant growth in the garden

1. *shade/ dryness of soil* **2 + 1**

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

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In what way will the tree influence the maintenance jobs to be carried out in the garden?

*Sweeping leaves in autumn/ pruning* **3**

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Suggest **one** hard landscape or other feature that you would include in your design

*Any relevant feature* **3**

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## 4. FLORISTRY, FRUIT & VEGETABLES.

(a) The watering of plant crops on a large scale is called irrigation **3**

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

- Producing plants that are identical in every way is called cloning **2**
- Aphids can be naturally controlled using ladybirds **2**
- The length of time crops can be stored is called shelf life **2**

**Packaging**

**Cloning**

**Shelf life**

**Crows**

**Copying**

**Ladybirds**

(c) You have been given 2 acres of land in order to set up a business to produce some flowers or fruit or vegetables. To borrow some money you need a business plan. What would you put in your business plan under each of the following headings?

1. Name the flower or fruit or vegetable you will grow and what demand there is for your produce

Name of flower or fruit or vegetable **3**

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2. Marketing or advertising your produce

Posters/ advertisements in local papers/etc **2 + 1**

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3. What list of materials or services would you include in the costing of your business plan?

Equipment required/ storage area/ sorting area/ labour/ electricity/ transport etc. **2 + 1**

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- (d) In the production of a flower or fruit or vegetable the environmental and soil conditions are shown in the table below. In relation to any **four** of these factors state how they would affect the production of your chosen flower or fruit or vegetable.

Environmental and soil conditions			
Number of pests	Level of nutrients in the soil	Drainage	Water supply
Soil pH	Wind direction	Slope of the land	Existing vegetation

Name of flower or fruit or vegetable \_\_\_\_\_

***Factor 1.*** ***3 + 3 + 3 + 3***

***pests reduce yield or damage crop*** \_\_\_\_\_

***soil pH must be adjusted to be suited to crop*** \_\_\_\_\_

***nutrients in soil must be adjusted to be suited to crop*** \_\_\_\_\_

***strong wind may affect crop growth and shelter must be provided from wind*** \_\_\_\_\_

***drainage – soil must be free draining as roots will not grow if waterlogged*** \_\_\_\_\_

***sloped ground unsuitable for some plants*** \_\_\_\_\_

***good water supply needed for best yield*** \_\_\_\_\_

***existing vegetation may need to be cleared for crop production*** \_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

Factor 3. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Factor 4. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## 5. FORESTRY

(a) A coniferous tree that loses its leaves in winter is the larch **3**

(b) Match the correct word in column A with the correct word in column B to give an answer in column C. **See shaded example** **3 X 2**

Column A	Column B	Column C
<b>1</b> Germination	<b>a</b> Leaves all year	<b>1 + c</b>
<b>2</b> Stratification	<b>b</b> Buds	<b><u>2 + d</u></b>
<b>3</b> Evergreen	<b>c</b> Growing seed	<b><u>3 + a</u></b>
<b>4</b> Node	<b>d</b> Preparing seeds	<b><u>4 + b</u></b>

(c) Forestry parks have many uses and support many activities. Describe **three** of these uses or activities using the photographs below.

1. birdwatching OR cutting logs for firewood OR hillwalking/ trekking/ nature trail OR orienteering / sport **3 + 3 +3**

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

\_\_\_\_\_

3. \_\_\_\_\_

\_\_\_\_\_

- (d) As part of your study of this module you studied forestry safety and the prevention of accidents. The photograph shows some of the safety equipment and clothing used by a forestry worker.

Name **two** items in the photograph and state how they protect the worker 2 (2 + 2)

Name of item 1. helmet/visor/face guard

How it protects protects head/ protects eyes

Name of item 2. ear muffs

How it protects protects ears/hearing from noise

**OR clothing/ not flammable OR steel tip footwear/ protects feet**

Injuries can result from the improper use of equipment in tree planting. Name **two** possible injuries and suggest **two** ways in which workers can prevent these injuries when planting trees.

Name of injury 1. any relevant injury 1

Prevention boots or gloves or goggles 1

Name of injury 2. cuts 1

Prevention gloves 1

## 6. GRASS

(a) A poisonous plant found in grassland is buttercup/ ragwort/ etc. **3**

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

**3 X 2**

- Grass plants are a member of the cereal family True  False
- Grass is pollinated by insects True  False
- The thistle is a common weed in grassland True  False

(c) The pictures show two ways of draining grassland, a mole drain and a drainage ditch

Suggest **one** advantage and **one** disadvantage of each method of draining land

**3 + 3 + 2 + 1**

### **Mole Drain**

Advantage costs less/ less disruptive to soil

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Disadvantage must be made when soil is fairly moist but not too wet or dry

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### **Drainage Ditch**

Advantage more efficient at draining water

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Disadvantage expensive/ more intrusive on the land

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(d) The following advice was given in a farming publication;

‘Spreading of silage effluent must be completed by September 30th each year. Soiled water and dairy washings can be spread on land all the year round where conditions are suitable. Spreading on land must be deferred where soils are saturated’.

Why is the spreading of farm wastes on land controlled? *Prevents water pollution* **3**

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In what sort of conditions is the spreading of farm wastes on grassland best carried out?

*dry* **3**

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What advantage is the spreading of farm waste to the management of grassland? \_\_\_\_\_

*Adds nutrients* **3**

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Suggest **one** possible disadvantage that the spreading of farm waste can have on an area of grassland

*A lot of weeds grow/ grass may be unpalatable to livestock for a period* **3**

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## 7. MILK AND MEAT PRODUCTION

(a) Specified Risk Material from slaughtered livestock is disposed of by burning/incineration **3**

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

**3 X 2**

Column A	Column B	Column C
<b>1 Bulling</b>	<b>a Rich in antibodies</b>	<b>1 + d</b>
<b>2 Colostrum</b>	<b>b Producing milk</b>	<b><u>2 + a</u></b>
<b>3 Lactation</b>	<b>c Pregnancy</b>	<b><u>3 + b</u></b>
<b>4 Gestation</b>	<b>d Livestock in heat</b>	<b><u>4 + c</u></b>

(c) During your study of this milk and meat production module you were involved in a visit to a farm. Describe what you learned using the following headings as a guide.

Organising the visit any relevant point **3**

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What you learned from the visit any relevant point **3**

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Health and safety rules for the visit any relevant point **3**

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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 cubicle house

Name **two** features that are included for the health and safety of livestock 2 + 1

1. non-slip floors/ adequate ventilation/ lighting
2. \_\_\_\_\_

What feature is included to keep the area free from animal waste?

Automatic scraper 2

Name a design feature which will help in controlling the environment within the house

High roof/ side wall ventilation 1

Suggest **two** ways in which the design and layout assist in the feeding of livestock 2 + 1

1. cattle fed from central passageway/ aisle wide enough to accommodate a tractor and diet feeder
2. \_\_\_\_\_

Suggest **two** other features of design or equipment that could be added to the house 2 + 1

1. mats/ water troughs
2. \_\_\_\_\_

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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>	