



Coimisiún na Scrúduithe Stáit
State Examinations Commission

**LEAVING CERTIFICATE
APPLIED 2010**

MARKING SCHEME

Agriculture and Horticulture

COMMON LEVEL

Introduction

The marking scheme is a guide to awarding marks to candidates' answers. It is a concise and summarised guide and is constructed in a way to minimise its word content.

Examiners must conform to this scheme and may not allow marks for answering outside this scheme. The scheme contains key words or phrases for which candidates may be awarded marks. This does not preclude synonyms or phrases which convey the same meaning as the answer in the marking scheme.

Although synonyms are generally acceptable, there may be instances where the scheme demands a precise term and will not accept alternatives.

The descriptions, methods and definitions in the scheme are not exhaustive and alternative valid answers are acceptable. If it comes to the attention of the Examiner that a candidate has presented a valid answer and there is no provision in the scheme for accepting this answer, then he/she must first consult with his/her Advising Examiner before awarding marks. In general, if in doubt about any answer, examiners should consult their Advising Examiner before awarding marks.

In longer answers a key word may be awarded marks only if it is presented in the correct context.

Cancelled Answers

The following is an extract from S63 *Instructions to Examiners 2010* (section 7.3, p.22). Particular attention must be given by examiners to this regulation where such cancelling occurs.

“Where a candidate answers a question or part of a question once only and then cancels the answer, you should ignore the cancelling and should treat the answer as if the candidate had not cancelled it.”

Surplus Answers

Surplus wrong answers cancel the marks awarded for a correct answer.

e.g.

Question: The best time to plant daffodil bulbs is _____ .

Correct answer: Autumn.

Sample candidate answer: Summer and Autumn.

In this answer the correct response – Autumn, is cancelled by the incorrect one – Summer, so no marks are awarded.

Conventions

- The mark awarded for an answer appears in *Italics* next to the answer in the marking scheme.
- A word that appears in brackets in the marking scheme is not a requirement of the answer, but is merely used to contextualise the answer.
- Square brackets are used where the Examiner's attention is being drawn to an instruction relating to the answer **or** to some qualification of the answer.
- Photographs and other graphics that appeared in colour in the original question paper have been rendered in greyscale in the marking scheme.

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).

(a) What is growing on the fruit shown in the picture?

_____ *Fungus or Mould (5)* _____

What chemical would you use to treat this problem?

_____ *Fungicide or named fungicide (5)* _____



(b) What **types** of grasses are mainly found in a luxury lawn seed mixture?

_____ *Fine grasses or no. 1 mix or bents or fescues (5)* _____

The type of lawn seed mixture sown in high-use areas is

_____ *Utility or standard or no. 2 or no. 3 (seed mix) (5)* _____

(c) Identify the garden pest shown in the photograph.

_____ *Slug (5)* _____

Suggest an organic method of controlling this pest.

_____ *e.g. Beer trap, copper bands, grit, grapefruit, (5)* _____



(d) The leaves of which tree are shown in the picture?

_____ *Sycamore (5)* _____

How does this tree scatter its seeds?

_____ *Wind or 'helicopters' or winged seeds (5)* _____



(e) The fruit plant shown in the photograph is called

Strawberry (5)

Name the vegetative structure used by this plant to produce new plantlets.

Runners (5)



(f) In animal breeding the letters A. I. mean

Artificial Insemination (5)

Give **one** advantage of using A.I. in the breeding of animals.

Greater selection of bulls **or** more genetic traits available **or** cheaper **or** safer (5)

(g) The best time of the year to plant daffodil bulbs is

Autumn (5)

Why are daffodil bulbs usually planted together in groups?

To create a pleasing effect (5)

(h) Name the piece of agricultural machinery shown in the photograph.

Forage Harvester (5)

What is this machine used for?

To cut silage **or** to cut maize **or** chop finely **or** blow to trailer (5)



Suggest **two** precautions you would take to prevent accidents when working with agricultural machinery.

1. any two relevant answers in relation to practice or equipment (5+5)

2. _____

(j) Teagasc is an organisation involved with Agriculture and Horticulture in Ireland. State **two** ways in which Teagasc helps the Agriculture/Horticulture industry.

1. Business, Technology, Practice Advice and rural development (any two) (5+5)

2. _____

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

Any relevant career associated with Ag/Hort (5)

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

Any relevant skill or area of knowledge associated with listed career (5)

(l) Identify the garden tool shown in the picture

Dibber (5)

In caring for this tool, after use, it is important to

Clean or lightly oil or dry or store (5)



(m) Plants lose water by a process known as

Transpiration (5)

The speed at which this process happens can be affected by

Temperature or humidity or brightness or soil water levels or time of year or wind speed (5)

(n) The warning symbol shown in the picture means

Poisonous / Toxic (5)

Name a substance that is likely to carry this symbol.

Weed killers or any relevant answer (5)



(o) Gestation in an animal means

Pregnancy (5)

Give the length of the gestation period of a **named** farm animal.

Name of farm animal. _____

Length of gestation period. Must match named animal (5)

(p) Name a pest **or** a disease that could affect a type of plant grown commercially in Ireland.

e.g. Caterpillars, greenfly, whitefly or any relevant pest or disease (5)

Suggest a prevention **or** control method for the named pest **or** disease.

Appropriate prevention or control method depending on named pest or disease (5)

(q) Name a tree that could be used as a special feature in a garden.

Silver Birch, Copper Maple, Weeping Willow or any relevant answer (5)

What is it about the appearance of the named tree that makes it suitable for this purpose?

Feature of the named tree correctly identified (5)

(r) Name a wood product produced as a result of the processing of forestry trees.

e.g. posts, planks, wood chips, sawdust (5)

Suggest a use for the wood product you have named.

Appropriate use depending on the product named (5)

Section Two
(120 marks)

Marks awarded for the best 4 from the following 6 questions. All questions carry equal marks i.e. 30 marks each.

2. BASIC HORTICULTURE

(a) Soil is made up of sand, silt, clay, living organisms and Humus or air or water (3)

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

Column A	Column B	Column C
Root	<i>Absorbs water</i>	Plants making food
Irrigation	<i>Plant watering system</i> (2)	Growing plants in a liquid medium
Hydroponics	<i>Growing plants in a liquid medium</i> (2)	Absorbs water
Photosynthesis	<i>Plants making food</i> (2)	Plant watering system

(c) Soil particles are produced by the weathering of rocks.
 Briefly describe **two** ways in which the weathering of rocks produces soil

1 Chemical or physical weathering processes - any relevant two (3+3)

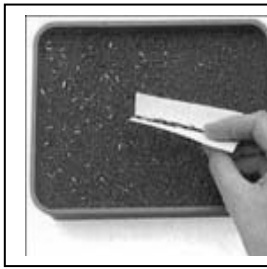
e.g. frost, compaction, erosion, rainfall, abrasion, temperature changes

2 _____

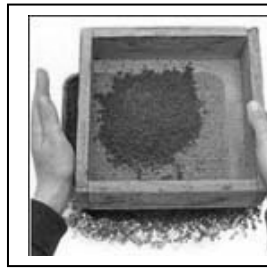
Describe **one** way in which plants **or** animals assist in the formation of soils.

e.g. breaking rocks, binding small particles, adding to humus (3)

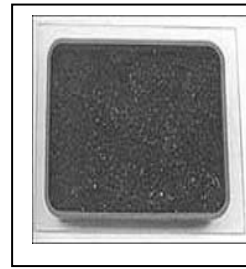
(d) The photographs A, B, C and D below show four stages in the planting of seeds but they are not in the correct order.



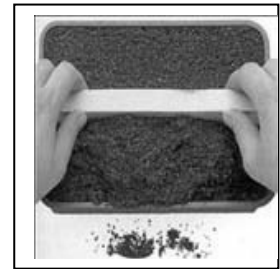
A



B



C



D

Put the letters in the correct order for the planting of seeds.

BDAC or DCAB or DACB or DABC or BDCA (2)

Describe **two** actions you can take to **prevent** an outbreak of disease in germinating seeds.

Action 1. Damp, not wet, compost / avoid humid, warm conditions/ ventilation/clean equipment/ sterile compost/fungicide – any two (2+2)

Action 2. _____

Name a disease which can affect young seedlings.

Mould or fungus or damping off (2)

In the event of the disease affecting the young seedlings, what type of **chemical** is used to control the disease?

Fungicide (2)

Suggest **one** precaution you would take when using this chemical

e.g. mask, gloves, goggles (2)

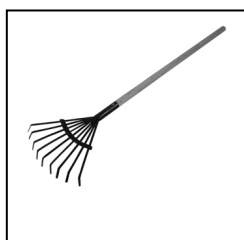
3. GARDEN DESIGN

(a) The Copper Beech tree is popular because of the colour of its Leaves (3)

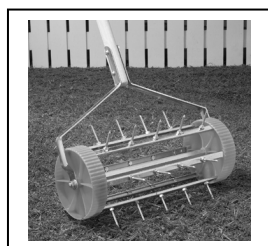
(b) State whether each of the following statements is true or false by ticking the correct box.

- Formal garden design uses wild and unruly features. True False (2)
- Trees are best planted close to the house. True False (2)
- Crocus plants grow from corms. True False (2)

(c) The pictures below show some of the tools used in the maintenance of a lawn.



A



B



C



D

In the case of any **three** of the above tools A, B, C and D name the tool and describe what lawn maintenance task the tool is used for. N. B. MARKS FROM ANY THREE ONLY.

Name of tool 1. A: (Tine) Rake (2)

Used for Removing leaves from the lawn (1)

Name of tool 2. B: Aerator or spiker (2)

Used for Makes holes in the lawn to improve aeration / drainage (1)

Name of tool 3. C: Fertiliser Spreader (2)

Used for Spreading fertiliser/ lawn sand / weed and feed (1)

Name of tool 4. D: Sprayer (2)

Used for Spraying weed killer or pest killer or liquid fertiliser on a lawn (1)

(d) You have been asked to plant a flower **or** tree **or** shrub in a garden.
Describe the steps you would take to successfully plant a flower **or** tree **or** shrub.

Materials and equipment needed.

Appropriate materials and equipment relevant to plant type chosen (2+2)

Planting the flower or tree or shrub.

Appropriate method of planting relevant to plant type chosen (2+2)

Caring for the young flower or tree or shrub.

Appropriate method of caring relevant to plant type chosen (2+2)

4. FLORISTRY, FRUIT & VEGETABLES.

(a) A cloche or low-sized plastic tunnel is used to Encourage early plant growth or protect from pests or protect from weather (3)

(b) Choose suitable words from the list below to complete the sentences that follow.

Pesticide Freezing Chilling Sterilised Herbicides Ladybirds

- It is important that every year a commercial green house is sterilised (2)
- Organic production of flowers or fruit or vegetables does not use herbicides or pesticides (2)
- The shelf life of flowers, fruit and vegetables can be increased by chilling or freezing (2)

(c) In your study of this module you investigated pests of flowers or fruits or vegetables.

1. Name a pest **and** describe how the pest might affect a crop of flowers or fruit or vegetables.

Name of pest. Name of valid pest (1)

Effect of pest on crop. Any correct effect for named pest (2)

2. How would you control the **named** pest? Any correct method for the named pest (3)

3. What management practices would you put in place to prevent further attack by this pest?
Any relevant management practice that would help prevent further attack by this pest (3)

- (d) As part of your study of flowers **or** fruit **or** vegetables you carried out an investigation. Describe what you learned from your investigation using the following headings as a guide.

MARKS: (2+2) + (2+2) + (2) + (2)

Production Methods.

Any relevant points

Harvesting and Grading.

Any relevant points

Transport and Storage.

Any relevant points

Display and Marketing.

Any relevant points

5. FORESTRY

(a) A deciduous coniferous tree commonly grown in Ireland is the Larch (3)

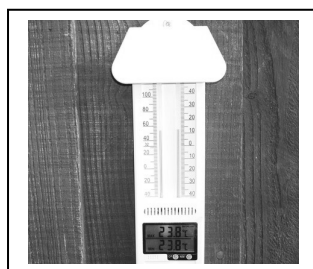
(b) Match each term in column A with the correct term in column B to give an answer in column C.
See shaded example

Column A	Column B	Column C
1 Hardwood	a Sticky buds	$1 + c$ (2)
2 Stratification	b Cutting the seed coat	$2 + d$
3 Scarifying	c Broadleaf Tree	$3 + b$ (2)
4 Horse Chestnut	d Burying seeds	$4 + a$ (2) <i>or</i> $4 + c$ (2)

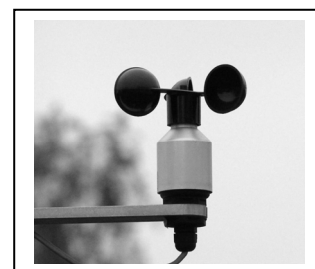
(c) The photographs below show three pieces of equipment used in weather monitoring



A



B



C

Name the pieces of equipment A, B and C. What is each piece of equipment used for?

Name of A. Rain gauge (2)

Used for Measuring rainfall amounts (1)

Name of B. (Max. and min.) thermometer (2)

Used for Measuring temperature of the air or measuring highest and lowest temperature (1)

Name of C. Anemometer or wind gauge (2)

Used for Measuring the speed of wind (1)

(d) As part of your study of this module you investigated the care and maintenance of an area of forest.

Answer the following questions in relation to any **two** activities for the care and maintenance of an area of forest.

MARKS: 2 (2 + 2 + 1 + 1)

Activity 1. e.g. thinning, weeding, pruning, draining, spraying, felling

Purpose of activity 1. any correct point relating to the named task

Equipment required. Correct identification of any item of equipment required for the named task

A precaution taken **or** personal safety equipment required.

Any one item of personal safety equipment **or** a precaution

Activity 2. e.g. thinning, weeding, pruning, draining, spraying, felling

Purpose of activity 2. any correct point relating to the named task

Equipment required. Correct identification of any item of equipment required for the named task

A precaution taken **or** personal safety equipment required.

Any one item of personal safety equipment **or** a precaution

6. GRASS

(a) Grass flowers are pollinated by Wind (3)

(b) Indicate whether each of the following statements is true or false by ticking the correct box.

- Conserved grass is dried or fermented. True (2) False
- Spikelet is another name for a grass flower. True (2) False
- The buttercup improves the feeding quality of grass. True False (2)

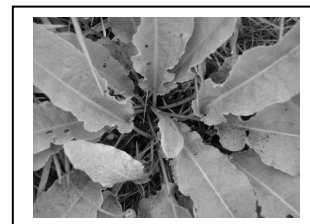
(c) Three grassland plants are shown in the pictures A, B and C



A



B



C

Name **each** plant **and** comment on its importance in grass production.

Name of A. Clover (2)

Comment on importance. Adds nitrogen (1)

Name of B. (Rye) grass (2)

Comment on importance. Most widely used grass, makes seed (1)

Name of C. Dock (2)

Comment on importance. A weed, high in Mg/P/K, prevents bloat due to high levels of tannins(1)

- (d) The picture shows part of a field that has been badly managed. The soil is poorly drained and rushes and weeds have grown.
Describe in detail any **two** activities you would carry out to change this field into an area of productive grassland.



Details of activity1. Name of activity and two details (2 + 2 + 2)

e.g. drainage, clearing, soil testing, weeding, topping, ploughing, re-seeding, fertilizing

Details of activity2. _____

[Marked as above] (2 + 2+2)

7. MILK AND MEAT PRODUCTION

(a) The disease grass tetany (also known as milk fever) is caused by a lack of the mineral

_____ *Magnesium and/or Calcium* _____ (3)

Grass tetany and milk fever are not the same disease as stated in the question

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

Column A	Column B	Column C
1 Dual Purpose	a Disease of the udder	<i>1 + d (2)</i>
2 Castration	b Milk rich in antibodies	<i>2 + c (2)</i>
3 Mastitis	c Neutering of young bulls	<i>3 + a (2)</i>
4 Colostrum	d Milk and Meat	<i>4 + b</i>

(b) During your study of this module you carried out an investigation into some aspect of the production of milk and meat.

What did you investigate? _____ *Relevant investigation* _____ (3)

What methods did you use in your investigation? _____ *Relevant method* _____ (3)

What were the main findings of your investigation?

_____ *Relevant findings* _____ (3)

(d) The pictures show two slurry storage systems.



Slurry Tank



Slurry Pit

Which storage system you consider to be better **and** give a reason for your answer?

Better system. _____ (2) _____

Reason. Valid argument for chosen system (2)

State **two** uses of slurry.

Use 1. Fertilizer or trap gas for fuel or soil conditioner any two (2 + 2)

Use 2. _____

Name **one** danger associated with the storage of large amounts of slurry.

e.g. fumes, drowning, leaks, smells (2)

State **one** precaution you must take when disposing of slurry.

e.g. not into waterways, not during wet weather, proper time of year only, remove animals from shed before agitation (2)

