

**Leaving Certificate Applied 2009
Vocational Specialism
Agriculture/Horticulture
(240 marks)**

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 – 2 marks for the first correct part of any answer + 8 marks for the second correct part).

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

Greenfly / Aphid

Name a garden vegetable attacked by this pest.

Any correct vegetable



- (b) The seeds of a thistle plant are scattered by

Wind

Name a plant whose seeds are scattered by animals.

Any correct plant

- (c) Name the garden tool shown in the photograph.

Rotavator / Cultivator

A piece of safety equipment to be used with this tool is

Boots / Goggles / Ear Muffs / Mask / Shin Guards

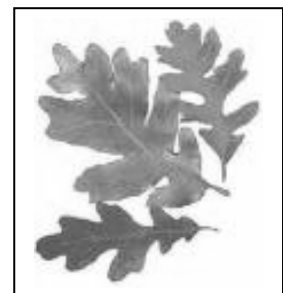


- (d) The leaves of which tree are shown in the picture?

Oak

Is this tree deciduous or coniferous?

Deciduous



(e) The plant structure shown in the photograph is called a

Corm [accept bulb]

Name a flowering plant that grows from this structure.

Any matching



(f) The meat animal that pork is produced from is

Pig

Name **one** problem caused by the intensive production of this animal.

Pollution / Disease

(g) The best time of the year to plant a tree is

Any season

When protecting a tree **from** the wind a stake is placed on what side of the tree?

Windward (the side the wind is coming from)

(h) Name the lawn weed shown in the picture.

Dandelion

The particular type of weedkiller used to remove this weed from a lawn is

Systemic or a correct named brand



(i) Accidents can occur in the practice of Agriculture and Horticulture.

Give **two** precautions you would take to prevent accidents in Agriculture/Horticulture.

1. Any relevant

2. Any relevant

(j) An Bord Glas is an organisation involved with Agriculture and Horticulture in Ireland. Name **two** ways in which An Bord Glas helps the Agriculture/Horticulture industry.

1. Advice / production / marketing or consumption of horticultural products

2. (Any 2)

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

Any

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

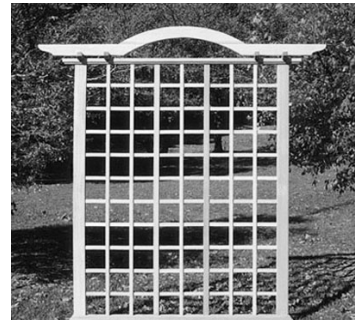
Any relevant

(l) Identify the garden feature shown in the photograph.

Trellis

Suggest **one** thing you could do to improve the appearance of this structure.

Paint / plant flowers or climbers



(m) The Irish climate can include long periods of wet weather during the summer season. Suggest **one** problem that this may cause for those involved in Agriculture/Horticulture.

Any / high cost / late crops

A common disease of plants that grow well in warm, wet conditions is

Mildew / mould / fungus

(n) The warning symbol shown in the picture means

Flammable(catches fire easily)

Name a substance that is likely to carry this symbol.

Petrol / fuel / oil or any relevant



(o) The food material produced as a result of lactation in an animal is

Milk

This food material can be changed into other products such as

Any dairy product

(p) The poisonous plant shown in the photograph is called

Ragwort

Name **one** other poisonous plant found in grassland.

Any



(q) State **two** actions you could carry out so as to produce high quality flowers **or** fruit **or** vegetables.

1. Provide shelter / use a greenhouse / prune / control light or temperature

2. (Any two)

(r) Identify the garden shrub shown in the photograph.

Holly

Why is this shrub grown in a garden?

Shape / colour / decoration / attract birds / for berries



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).

a. BASIC HORTICULTURE

(a) Plants make food by a process known as Photosynthesis (3)

(b) Match each term in column A with a term from column C by writing the most appropriate term in column B. See shaded example.

Column A	Column B	Column C
Root	Absorbs water	Part of soil formed from decayed plants and animals
Stem	<u>supports leaf</u> (2)	Very fine soil particles
Humus	<u>part of soil formed from decayed plants and animals</u> (2)	Absorbs water
Clay	<u>very fine soil particles</u> (2)	Supports leaf

(c) Artificial growing media are used more and more in growing plants from seed. Name **three** growing media other than soil that you could use for growing plants.

1. Peat / sand 2. vermiculite / water 3. perlite / compost (1+1+1)

State **two** advantages that artificial growing media have over soil-based growing media.

1. No bacteria or fungi / no weeds or seeds / better water content / better air content
2. Any two (2+2)

Coarse sand is added to soil-based growing media to improve

Drainage / aeration (2)

(d) The photographs A, B, C and D below show the stages in the taking of a cutting from a plant. The photographs are not in the correct order.



A



B



C



D

Put the letters in the correct order for the taking of a cutting.

B; A; D; C

(2)

Why are the lower leaves removed as shown in photograph A?

Allows stem into soil / reduces transpiration / increases the chances that some leaves will survive

(2)

Why is the stem cut at an angle as shown in photograph D?

Lets more water in / surface area for absorption is increased

(2)

Outline a simple experiment to show that the chemical being used in photograph C actually works.

Equipment.

Rooting powder

(2)

Setting up the experiment.

Set up one cutting with rooting hormone and one without

(2)

Expected result.

The one with the rooting hormone grows better

(2)

3. GARDEN DESIGN

(a) A pergola is normally made from Wood /metal / stone (3)

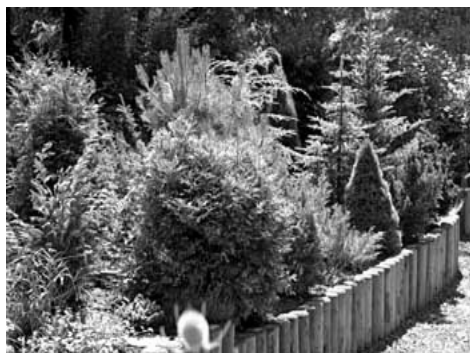
(b) Indicate whether the following statements are true or false by ticking the correct box.

• A low mowing height reduces weed numbers in the lawn. True False (2)
OR

• A very acid soil is best for your lawn. True False (2)

• Nitrogen fertiliser makes the grass very green. True False (2)

(c) The pictures below show some of the features in a garden for visually impaired people.



Picture 1



Picture 2

What features of a garden for visually impaired people do the pictures show?

Picture 1. Well defined path edges / gravel path / changing texture

Picture 2. Fragrant plants / raised beds Any Two (2 +1)

Suggest **two** other features you would include in a garden for visually impaired people.

1. Level lawns / smooth paving / wind chimes / fountains /

2. fragrant plants / textured plants Any Two (2+1)

Name **two** things you would **not** include in a garden for visually impaired people for safety reasons.

1. Wooden paths / steps / sharp edges / ponds / low branches / thorny plants

2. Any Two (2+1)

(d) During your study of the Garden Design module you looked at putting a hard landscape feature into the garden.

What hard landscape feature might you place in a garden?

Fountain / path / patio /statue / deck / any relevant item (2)

Suggest **two** points you would consider in deciding on a location for this hard landscape feature.

1. Any relevant point (2)

2. Any relevant point (2)

What materials would be required to complete the hard landscape feature you named above?

Matching materials (2)

What steps could you take to reduce the maintenance required by this hard landscape feature?

Any relevant steps (2)

How would you make sure that this hard landscape feature remains attractive during the winter?

Any relevant method (2)

4. FLORISTRY, FRUIT & VEGETABLES

- (a) Name a common flower **or** fruit **or** vegetable produced in Ireland.

Any but must be from Ireland (3)

- (b) Complete the following sentences in the spaces provided using the correct words from the list below.

Fungus **Fertile** **Wanted** **Aphid** **Quality**

Mildew is a disease caused by a Fungus (2)

The grading of flowers **or** fruits **or** vegetables is most often based on Quality (2)

A weed is a plant which grows where it is not Wanted (2)

- (c) In your study of the Floristry, Fruit & Vegetables module you carried out a survey.

Why did you carry out this survey? To find out something(item listed) (3)

Suggest an activity you undertook to prepare for your survey.

Research...Library / internet / books / teacher / visit / making out questions (3)

What did you learn as a result of your survey? Any relevant comment (3)

- (d) A test was carried out on the control of insect pests in a crop of flowers **or** fruit **or** vegetables. The methods used were: 1. Soap suds; 2. Organic spray; 3. Systemic pesticide. The results show how the three methods affected the number of pests on the crop over a period of time.

	Number of insect pests present in the weeks following treatment		
Week No.	Soap suds	Organic spray	Systemic pesticide
1	0	10	0
2	3	0	0
3	9	0	0
4	18	0	5

Which method of control was the least effective? Soap suds (3)

Suggest **one** advantage and **one** disadvantage for any **two** of the control methods used above.
Any Two 2 x (2 + 1)

Control Method. 1. Soap Suds

Advantage. Safe

Disadvantage. Does not work well

Control Method. 2. Organic spray

Advantage. Works well

Disadvantage. Slow

Control Method. 3. Systemic pesticide

Advantage. Works quickly

Disadvantage. Does not last long

Suggest **one** safety precaution you would take when working with chemical sprays.

Gloves / mask / goggles (3)

5. FORESTRY

- (a) What colour are the buds on a winter twig of an ash tree? Black (3)
- (b) Match each word in column A with the most suitable term in column B to give the correct answer in column C. **See shaded example.**

Column A	Column B	Column C
1 Hardwood	a Cover formed by trees	1 + c
2 Aspect	b Red deal	<u>2+d</u> (2)
3 Canopy	c Broadleaf tree	<u>3+a</u> (2)
4 Pine	d Direction a slope faces	<u>4+b</u> (2)

- (c) The photographs below show three pieces of equipment used in the maintenance of forestry.



A



B



C

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

A. Saw / loppers / branchers

Used for. Pruning trees / cutting branches (2+1)

B. Hard hat / eye protectors / ear protectors / any 1

Used for. Protection (2+1)

C. Chain saw

Used for. Cutting timber / fencing (2+1)

- (d) As part of your study of the Forestry module you investigated the growing of a tree from seed. Under each of the following headings write down **two** pieces of advice or information that you learned about the growing of a tree.

Overcoming dormancy in tree seeds.

Sandpaper / scarification / cold treatment / soak in water Any Two (2+1)

Planting a tree seed.

Use a pot or seed tray / Make a hole and plant in the ground / insert seed and cover /
use compost Any Two (2+1)

Protecting the young tree.

Shelter / use a sleeve / water / use a fence or tree guard /
stake / tie Any Two (2+1)

Caring for a growing tree.

Remove weeds / clear an area around the tree / check stake and tie /
water well in dry weather Any Two (2+1)

6. Grass

(a) The topping of grass is cutting off the long pieces of grass / keeping grass in a vegetative state / promoting tillering (3)

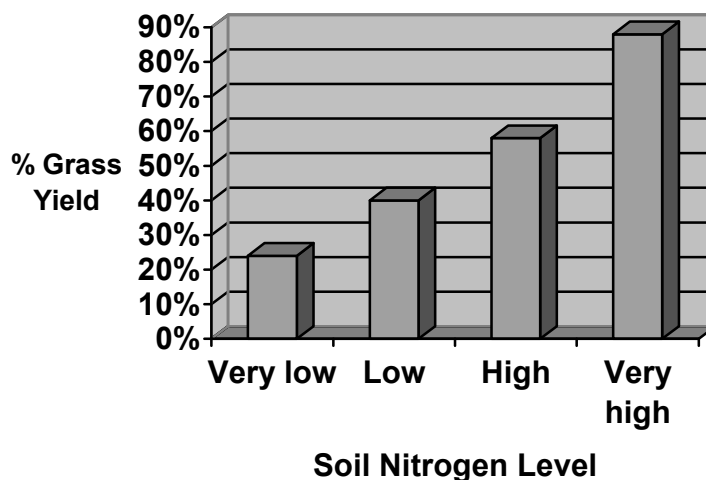
(b) Indicate whether the following statements are true or false by ticking the correct box.

• Damp hay will not rot. True False (2)

• The clover plant is high in protein. True False (2)

• The dock plant is poisonous to animals. True False (2)

(c) The bar chart below shows how percentage grass yield varies with soil nitrogen levels.



What does this tell you about the importance of nitrogen for the growth of grass?

It promotes grass growth

Name a good source of organic nitrogen fertiliser.

Dung / slurry / farmyard manure / compost

Suggest **one** disadvantage of using this form of organic fertiliser.

Pollution / smelly / labour intensive / contains weed seeds / bulky

Name a plant you could add to your grass seed mixture to boost the nitrogen levels in soil.

Clover

(3+3+3+2)

- (d) During your study of the Grass module you investigated the production and storage of hay **or** silage.
Circle one of the words below to indicate whether your answers are in relation to hay **or** silage.

HAY

SILAGE

How would you know that grass is ready for cutting as hay **or** silage?

Hay: Height of grass /50 – 70 cm long

Silage: cut before seed heads are formed / height (2)

What type of weather best suits the harvesting of hay **or** silage?

Dry (2)

How long is the harvesting period for hay **or** silage?

During the summer / 4 to 6 months / April to October (2)

Suggest **two** management practices you would carry out to make sure that your field of grass is in an ideal state for harvesting as hay **or** silage.

Add fertiliser / add fertiliser early / spread suitable amounts of fertiliser /

remove grazing animals in good time / named fertiliser Any Two (2)

Suggest **one** precaution you would take to ensure the quality of hay **or** silage during storage.

Hay: keep dry

Silage: keep airtight / keep sealed (2)

7. MILK AND MEAT PRODUCTION

(a) A common infection of the udder of a milk producing animal is Mastitis (3)

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

Column A	Column B	Column C
1 Dual purpose	a Test carried out on milk	1 + d
2 Antibiotic	b Mineral supplement	<u>2+c</u> (1)
3 Cell count	c Unwanted residue in milk	<u>3+a</u> (1)
4 Salt lick	d Milk and meat	<u>4+b</u> (1)

(c) Answer the following questions on the care and rearing of a milk **or** meat animal.

Name the milk **or** meat animal that you investigated.

Any correct (3)

State how you would feed the animal while it is pregnant.

Ensure a balanced diet is maintained / feed hay / feed silage / feed nuts /

give extra food / give good quality grass (3)

How would you know that the animal is close to giving birth?

Restless / agitated / raised tail / swollen udder / pin bones relaxed in mammals (3)

How would you care for the newborn and its mother immediately after the birth?

Ensure newborn animal feeds / observe carefully / provide clean bedding / give water

(3)

- (d) The picture below shows a shed which the farmer wishes to convert into housing for animals in the winter time.



What additional work would you carry out on this structure to adapt it for housing animals?

Put in scrapers / barriers / top sheeting / provide water container / provide feed container (3)

Comment on how you would deal with effluent and waste water run-off.

Drain water to slurry tank / put a pit under the shed / clean water could be collected and reused (3)

What features would you include for the comfort and well-being of the animals?

Straw beds / mats / scrapers / sawdust / peat / water / food container
Any Two (2+1)

What features would you include to allow for the safe handling of the animals?

Barriers / crush / pin Any Two (2+1)