



Excluding examiner comments

## RHS Level 2 Certificate in Plant Growth and Development

### UNIT 2

Tuesday 27 June 2023

09:30 - 11:30

**Candidate Name:** .....

**Candidate Number:** .....

**Centre Name:** .....

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### Instructions

This paper contains three sections which may be answered in any order. Candidates should answer:

- **Section A – all** questions (20 marks)
- **Section B – all** questions (50 marks)
- **Section C – only TWO from FOUR** questions (30 marks).

Place a cross (X) in the box identifying the two **Section C** questions you have answered.

C 1	C 2	C 3	C 4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### Please note:

- i) The duration of this paper is **120** minutes.
- ii) Write all answers legibly in the spaces provided and use black or blue ink only.
- iii) Use **METRIC** measurements only.
- iv) Where plant names are required, they should include genus, species and where appropriate, cultivar.
- v) Where a question requires a specific number of answers, only the first answers given will be marked regardless of the number of answers offered.

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Candidate name

Candidate number

Centre name

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**RHS Level 2 Certificate in Plant Growth and Development - UNIT 2**

Candidate Name: .....

Centre Name: .....

Candidate Number: .....

**SECTION A**  
**RESPONSE GRID**

**Instructions**

Place a cross (X) in the box you believe is the correct answer. If you make a mistake, score through the box and place a cross in the correct box as follows:



	<b>Question</b>	<b>Answer</b>			
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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# Section A

**Answer all questions in this section.  
This section is worth 20 marks and each question is worth 1 mark.**

## Question 1

Which is the name of the plant adaptation indicated by the arrow in photograph below:



- a) runner
- b) tendril
- c) stolon
- d) tuber.

## Question 2

What is the name given to the plant response that encourages growth towards or away from an external stimulus?

- a) testa
- b) trichome
- c) transpiration
- d) tropism.

please turn over.....

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### **Question 3**

A botany textbook contains the following information:

*"These are roots that form from unusual places on the plant such as from stems or leaves. Plant propagators use the plant's ability to produce this type of root, when making cuttings."*

What type of root is the textbook referring to?

- a) adventitious
- b) additional
- c) auxiliary
- d) adapted.

### **Question 4**

The paved area in the photograph below has been damaged by tree roots.



What is the cause for this damage?

- a) The soil is compacted, and the tree roots are searching for hydrogen
- b) The soil is compacted, and the tree roots are searching for carbon dioxide
- c) The soil is compacted, and the tree roots are searching for oxygen
- d) The soil is compacted, and the tree roots are searching for clay particles.

please see over.....

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### **Question 5**

The instructions on a packet of seeds reads: "These seeds should be scarified prior to sowing."

What does scarification involve?

- a. Weakening the seed coat to encourage germination
- b. Scaring the flowering head to encourage the release of seeds
- c. Healing the attachment scar between a seed and its fruit
- d. Removal of the seedcoat from the cotyledons on seedlings.

### **Question 6**

Dr Rudolf Steiner developed and introduced the concepts behind which system of growing?

- a) Organics
- b) Permaculture
- c) Biodynamics
- d) Hydroculture.

### **Question 7**

Which of the following statements is **NOT** an ecosystem service provided by a plant:

- a) temperature regulation
- b) noise reduction services
- c) flood mitigation services
- d) dichromatic displays.

please turn over.....

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### **Question 8**

What is the most likely reason for the selection of the plant supports shown in the photograph below?



- a) Plant supports that are made from garden prunings increase hoverfly populations
- b) Plant supports that are made from garden prunings increase the nesting spaces for wild birds
- c) Plant supports that are made from garden prunings, are more sustainable than bamboo canes
- d) Supports made from garden prunings root and are a best practice method of propagating new plants.

### **Question 9**

Which organisation runs Britain in Bloom?

- a) National Trust
- b) Royal Horticultural Society
- c) Association of Town Planners
- d) Horticulture Trades Association.

please see over.....

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### **Question 10**

Which of the following statements is **NOT** a definition of net positive as it relates to public gardens?

- a) The garden puts more back into research and development than it takes out
- b) The garden puts back into society more than it takes out
- c) The garden puts more back into the global economy than it takes out
- d) The garden puts more back into the environment than it takes out.

### **Question 11**

A report states:

*"A potential impact of climate change on garden maintenance is the increase in pollarding of trees and other stormscape concepts."*

What is pollarding?

- a) Pruning to restrict the growth of a tree to a specified height
- b) Felling trees, leaving a stump to encourage new shoot
- c) Removal of poor, weak, diseased, and overcrowded trees
- d) A 'D' shaped area that is cleared of trees to create woodland edge.

### **Question 12**

Which of the following areas is **NOT** identified as being a role of horticulture in society?

- a) Reduced crime
- b) Reduced biodiversity
- c) Improved wellbeing
- d) Improved health.

please turn over.....

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**Question 13**

When considering a food chain, a monophagous relationship is one where:

- a) the primary consumer eats only one species of plant
- b) the primary consumer eats several species of plant
- c) the primary consumer mates once every season
- d) the primary consumer lays its eggs in flowing water.

**Question 14**

Which of these phrases most accurately explains the concept of a habitat corridor?

- a) Any linear feature in the landscape that can be used for migration and dispersal of wildlife
- b) Any vertical feature in the landscape that can be used for migration and dispersal of wildlife
- c) Any swale which is subject to seasonal flooding, that can be used for migration of frogs
- d) Any cascade within the landscape that can be used for the migration of aquatic species.

**Question 15**

Phenology is the study of:

- a) seasonal changes in plants and animals from year to year, such as flowering of plants
- b) chemicals that animals produce which changes the behavior of other animals of the same species
- c) the arrangement of botanical features such as leaves on an axis or on a plant stem
- d) the adverse effects that a range of chemical substances can have on plant growth.

please see over.....

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### **Question 16**

The Woodland Trust suggests that when growing trees, the seed should be selected from the local area, as this promotes “adaptation and resilience”.

This concept is known as:

- a) perennial seed
- b) pseudomonas seed
- c) seed phytophthora
- d) seed provenance.

### **Question 17**

Which of the following statements does **NOT** apply to the duties of employers under the Manual Handling Operations Regulations 1992?

- a) Avoid the need for hazardous manual handling ‘as far as is practicable’
- b) Assess the risk of injury for any hazardous manual handling that cannot be avoided
- c) Reduce the risk of injury from hazardous manual handling ‘as far as is practicable’
- d) Replace all manual handling with automated systems ‘as far as is practicable’.

### **Question 18**

A horticultural risk assessment contains the standard safety symbol shown below.



This symbol requires:

- a) wellington boots must be worn
- b) safety boots must be worn
- c) white wellington boots must be worn
- d) safety wellington boots must be worn.

**Question 19**

Which of the following is not a protected characteristic under the Equality Act 2010?

- a) being unemployed
- b) having a disability
- c) gender reassignment
- d) being pregnant.

**Question 20**

Primulas have both pin and thrum eyed flowers.

These floral adaptations ensure that the flower is:

- a) resistant to rain
- b) drought tolerant
- c) cross pollinated
- d) wind pollinated.

**End of section A.**

**Please continue to Section B.**

## Section B

Answer all questions in this section.  
This section is worth 50 marks.

MARKS

### Question 1 (4 marks)

The photograph below shows the gardens at Rydal Mount, Cumbria.



- a) Is this garden laid out in a formal, or an informal garden style?

1

- b) Identify **THREE distinct** features that confirm your selection of garden style:

3

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Total Mark

## **Question 2 (10 marks)**

## **MARKS**

- a) A friend has asked for help in selecting the right plant for the right purpose in their new garden.

Using the table provided, suggest an appropriate plant for each purpose and justify your plant selection.

Purpose	Suggested plant	Justification of plant selection
Encourage wildlife		
Climate mitigation		
Create a boundary		

- b) Using your knowledge of biodiversity and sustainability, list **FOUR** advantages of using plants to create garden boundaries.

4

Total Mark

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**Question 3 (8 marks)****MARKS**

A botanical garden is creating an exhibition to showcase how plants are able to survive in a wide range of different environmental conditions. You have been asked to help the events team by completing the table below.

State **ONE** advantage and **ONE** named plant example for each plant adaptation.

Plant adaptation	Advantage	Named plant example
Hirsute (hairy) leaves		
Aerenchyma cells		
Thorns		
Pneumatophores		

2

2

2

2

Total Mark

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**Question 4** (9 marks)

Using the table below:

- a) List **THREE** types of community horticultural project.
- b) State **ONE** benefit that each community horticultural project could deliver.
- c) Explain how community horticultural project supports **EACH** of the three pillars of sustainability.

List <b>THREE</b> types of community horticultural project	State <b>ONE</b> benefit that each community horticultural project could deliver.	Explain how the community horticultural project supports <b>EACH</b> of the three pillars of sustainability.

3

3

3

## **MARKS**

## **Question 5 (8 marks)**

- a) State **TWO** purposes of Biodiversity Action Plans.

2

- b) How can Biodiversity Action Plans impact on the creation of gardens?

3

- c) How can Biodiversity Action Plans impact on the maintenance of gardens?

3

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**Total Mark**

**Question 6 (8 marks)**

A community centre has asked for your help in designing new informal plantings as part of a refurbishment of the site.

Discuss how your design would be influenced by:

<b>a) Colour</b>	
<b>b) Seasonal interest</b>	

4

4

**Question 7 (3 marks)****MARKS**

List **THREE** requirements that the **Health and Safety at Work Act (1974)** places on all workplaces.

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**End of section B.****Please continue to Section C.**

## **Section C**

**There are FOUR questions in this Section. You must only answer TWO questions.**

**Please write your answers on the following pages.**

**Each question is worth 15 marks. This section is worth 30 marks.**

**NOTE:**

**You MUST indicate which question you are answering by placing a cross in the appropriate box on the FRONT of this exam paper.**

please turn over.....

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### Question C1



Coleton Fishacre, an Arts and Crafts Garden

*"Often we think design is about bringing something new into the world. Most of the time, it's actually about taking some idea or thing that already exists and making it better"* (Anthony Deen).

Explain how the Arts and Crafts movement continues to influence garden design today?

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## Question C2

How can edible landscapes exploit plant adaptations?

Your answer should make reference to named plant adaptations (using appropriate technical language), and make reference to named plant examples (scientific names are not required for this question).

Total Mark

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### Question C3

A new community garden is planned for a 0.2Ha site in an urban setting.

Their Facebook page states:

- We are so excited about this space!
  - We are committed to creating a space for personal growth and wellness
  - We are committed to creating habitat for urban wildlife
  - We are committed to creating an oasis for butterflies and other pollinators.

Using your knowledge of community horticulture, citizen science and biodiversity, explain how this garden can achieve its stated ambitions.

Total Mark

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## Question C4

With reference to a **NAMED** horticultural situation, how can a knowledge of Sustainability and Best Practice help to minimise the negative impacts of horticulture on the environment.

### Total Mark

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