



## RHS Level 2 Certificate in Plant Growth and Development

### UNIT 2

Tuesday 17 October 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:

- The duration of this paper is **120** minutes.
- Write all answers legibly in the spaces provided and use black or blue ink only.
- Use **METRIC** measurements only.
- Where plant names are required, they should include genus, species and where appropriate, cultivar.
- 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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**RHS Level 2 Certificate in Plant Growth and Development - UNIT 2**

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

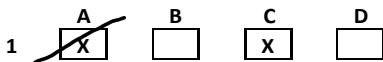
**Centre Name:** .....

**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:



Question	Answer			
	A	B	C	D
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	<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

In risk assessments the factors that can cause illness or injury are called:

- a) Assessment
- b) Risk
- c) Hazard
- d) Record.

## Question 2

The use of plants that are resistant to drought is an example of:

- a) climate sensitivity
- b) climate mitigation
- c) climate variability
- d) climate resilience.

## Question 3

A horticultural business has not made reasonable adjustments for a disabled employee, placing them at a substantial disadvantage.

This is defined as:

- a) discrimination
- b) victimisation
- c) harassment
- d) inclusion

please turn over.....

#### Question 4

The sign shown below is an example of a:



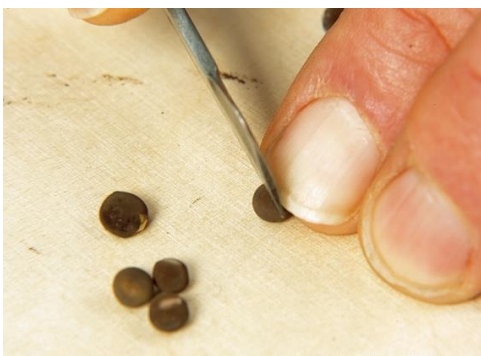
- a) prohibition sign
- b) warning sign
- c) mandatory sign
- d) first-aid sign.

#### Question 5

The ability of a single plant cell to divide and produce the complete range of cell types a plant requires is called:

- a) totipotency
- b) thallus
- c) thigmotropism
- d) tracheid.

#### Question 6



The seeds in the image above are undergoing:

- a) stratification
- b) compression
- c) scarification
- d) division.

### Question 7

The NHS website contains the following statement:

This service “links them to nature-based interventions and activities, such as local walking for health schemes, community gardening and food-growing projects.”

Which service most fully meets the above statement?

- a) Natural Health Service
- b) Britain in Bloom
- c) Horticultural Therapy
- d) Green Social Prescribing.

### Question 8

Which of the following is the main reason for the development of urban public parks by the Victorians?

- a) The urban parks movement sprang out of a desire to provide the new Victorian middle classes with places to promenade and form social connection.
- b) The urban parks movement sprang out of a desire to showcase the latest plants being introduced to the UK by plant hunters, and plant breeders.
- c) The urban parks movement sprang out of a desire to improve health in the overcrowded conditions of the rapidly growing urban towns.
- d) The urban parks movement sprang out of a desire to find employment for returning soldiers from wars and conflicts held in the Victorian era.

### Question 9

Which one of these is not a benefit of urban greening?

- a) The cleaning of air in cities
- b) The development of inclusive communities
- c) Reduce the risk of flooding
- d) Keeping cities cool in a changing climate.

please turn over.....

### Question 10

Which **two** of the following describe the social benefits of Botanical Gardens?

- 1 Providing professional skills in horticulture.
- 2 Providing opportunities for outdoor recreation.
- 3 Building community spirit and reducing crime.
- 4 Creating a network for plant conservation.

- a) 1 and 2
- b) 2 and 3
- c) 3 and 4
- d) 1 and 3

### Question 11

Minimal cultivation systems, such as no dig, offer which environmental advantage?

- a) Sequestration of Nitrogen in the soil
- b) Sequestration of Carbon in the soil
- c) Sequestration of Iron in the soil
- d) Sequestration of Magnesium in the soil.

### Question 12

Which of the following is one of the three pillars of sustainability?

- a) Economic viability
- b) Educational initiatives
- c) Legal enforcement
- d) Regional accountability.

please see over.....



### Question 13

The image below shows *Tyria jacobaeae* (Cinnabar moth) on *Senecio jacobaea* (Ragwort).



In this example of a food web, the *Tyria jacobaeae* is the:

- a) secondary consumer
- b) tertiary consumer
- c) quaternary consumer
- d) primary consumer.

### Question 14

The Botanical Society of Britain and Ireland website states that herbaria are one of the most fantastic botanical resources.

Herbaria are:

- a) linear plantings putting plant introductions in a time frame
- b) a systematically arranged collection of dried plants
- c) systematic beds to study species and plant families
- d) a systematically arranged collection of Coleoptera.

please turn over.....

**Question 15**

Which flowers produce the greatest quantity of nectar and pollen?

- a) Single flowers
- b) Double flowers
- c) Triple flowers
- d) Quadruple flowers.

**Question 16**

The study of seasonal changes in plants and animals from year to year, such as flowering of plants, emergence of insects and migration of birds is known as:

- a) Parthenocarpy
- b) Pneumataphore
- c) Phenology
- d) parenchyma.

**Question 17**

The RSPB Big Garden Bird Watch is an example of:

- a) collective science
- b) community science
- c) co-operative science
- d) citizen science.

**Question 18**

The findings of horticultural research and development is often trialled at leading gardens and then shared through professional networks.

This process is called:

- a) method statement
- b) operating procedure
- c) best practice
- d) quality control.

please see over.....

**Question 19**

Within the UK Biodiversity Action Plan, traditional orchards are identified as:

- a) significant habitats
- b) priority habitats
- c) primary habitats
- d) important habitats.

**Question 20**

Which of the following statements is not an example of an ecosystem service provided by plants:

- a) resilient local economies
- b) the provision of food
- c) the storage of carbon
- d) interactions with nature.

**End of section A.**

**Please turn over to continue to Section B.**

## Section B

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

### Question 1 (4 marks)

Insert the words contained in the list below, into the gaps in the text.

- Herbivory
- Allelopathy
- Abiotic
- Aphid

Plant leaves (and other plant organs) can produce oils, (sometimes referred to as aromatics), the advantage that these offer the plant are shown below.

- i) The reduction of \_\_\_\_\_ stress, for example a reduction in water loss. **1**
- ii) \_\_\_\_\_ (where one organism produces biochemicals that influence the growth, survival, development or reproduction of other organisms). **1**
- iii) Repellence of vectors of viral diseases, e.g. \_\_\_\_\_. **1**
- iv) Defence against \_\_\_\_\_, inhibition of feeding. **1**

**MARKS**

please see over.....

Total Mark

**Question 2** (6 marks)

**MARKS**

Grasses are pollinated by the wind.

a) State **TWO** ways that grass pollen is adapted to suit this vector of pollination.

.....

.....

.....

.....

**2**

b) State **TWO** ways that grass flowers are adapted to maximise wind pollination.

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**2**

c) State the advantage **ONE** of these adaptations offers to the plant?

.....

.....

**1**

d) Plants provide a number of services to pollinators. Some plants produce nectar and pollen. State **ONE** other service that plants can provide to moths and butterflies.

.....

.....

**1**

Total Mark
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please turn over.....

Question 3 (10 marks)

MARKS

Complete the table below to explain the key characteristics of informal plantings.

Characteristic	How this is expressed in informal plantings
Shape and form	
Colour palette	
Planting numbers	
Water features	
Matrix plantings	

2

2

2

2

2

please see over.....

Total Mark

**Question 4 (12 marks)**

This question is about plant associations, the way that plants are combined in gardens, using colour theory, to create effective and pleasing displays.

Answer the question, by completing the table below:

Named garden situation:		
Season for display		
Name THREE plants that associate well.	Colour	Explain why these plants associate well?
1.		
2.		
3		

4

4

4

Please turn over.....

Total Mark

**Question 5 (8 marks)**

a) State **FOUR** positive environmental impacts of seasonal, short-term plant displays.

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b) State **FOUR** negative environmental impacts of seasonal, short term displays.

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**Question 6** (3 marks)

People garden for a number of different reasons.

State **THREE** social benefits of gardening.

1 .....  
.....

**1**

2 .....  
.....

**1**

3 .....  
.....

**1**

**Question 7** (3 marks)

State **THREE** potential impacts of poor plant selection on function and design.

1 .....  
.....

**1**

2 .....  
.....

**1**

3 .....  
.....

**1**

please turn over.....

Total Mark

**Question 8 (4 marks)**

**MARKS**

a) Suggest suitable plant species for the following puposes:

i) To provide a screen

.....

.....

**1**

ii) To create horizontal planes

.....

.....

**1**

b) Explain how a knowledge of plant adaptations can be used when selecting plants for a purpose.

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**2**

**End of section B.**

**Please see over and continue to Section C.**

Total Mark

## 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.

**Question C1 (15 marks)**

Describe the ways that plants can defend themselves.

Your answer should include reference to:

- named plant examples
- a range of biotic/abiotic factors.

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Total Mark







**Question C2 (15 marks)**

With reference to a **NAMED** horticultural situation, explain the factors that influence the spacing of plants when planting garden areas.

Your answer should make reference to plant adaptations, planting styles and biodiversity.

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Total Mark









**Question C3 (15 marks)**

How can gardens be maintained to create a range of habitats to encourage wildlife?

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Total Mark







**Question C4 (15 marks)**

Discuss Renaissance gardens using the following headings:

- Historical context
- Key features
- Impact on current garden styles.

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Total Mark







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