



Excluding examiner comments

RHS Level 2 Certificate in Plant Growth and Development

UNIT 1

Monday 26 June 2023

09:30 - 11:30

Candidate Name:

Candidate Number:

Centre Name:

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.

THIS PAGE IS INTENTIONALLY BLANK

PLEASE DETACH THIS PAGE FROM THE BOOKLET

RHS Level 2 Certificate in Plant Growth and Development - UNIT 1

Candidate Name:

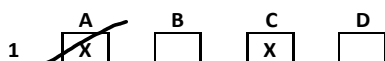
Centre Name:

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"/>

Candidate name

Candidate number

Centre name

THIS PAGE IS INTENTIONALLY BLANK

Section A

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

Question 1

Which of the following is the correct order of hierarchy in plant taxonomy?

- a) Family, species, variety, genus
- b) Family, genus, species, variety
- c) Genus, variety, species, variety
- d) Variety, family, genus, species.

Question 2

Which of the following types of plant completes its life cycle several times in the same year?

- a) Annual
- b) Perennial
- c) Ephemeral
- d) Biennial.

Question 3

Which of the following is a bulk constituent of a cactus growing media?

- a) Horticultural grit
- b) Bark chips
- c) Garden soil
- d) Compound fertiliser.

please turn over.....

Candidate name

Candidate number

Centre name

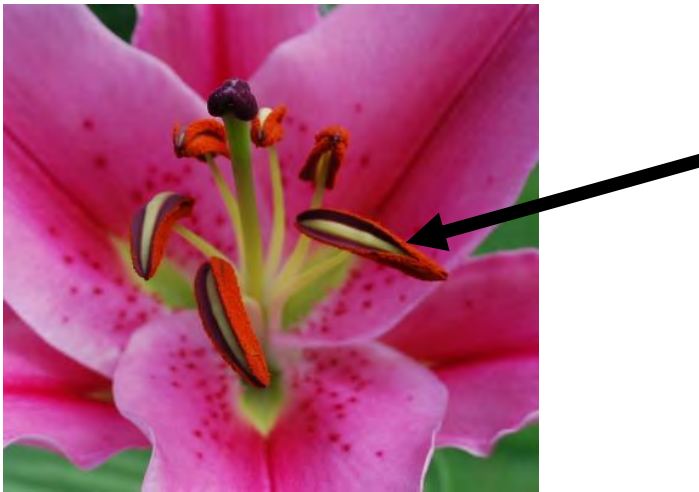
Question 4

Which material could be used to raise the pH of a soil?

- a) Sulphur chips
- b) Ericaceous compost
- c) Aluminium sulphate
- d) Ground limestone.

Question 5

What is the purpose of the organ identified by the arrow shown in the photograph below?



- a) To produce pheromones
- b) To produce nectar
- c) To produce pollen
- d) To produce scent.

Question 6

Which of the following best explains the advantage of weeds in a vegetable plot?

- a) Water and nutrients are removed from the soil
- b) Provision of shade for growing crops
- c) Weeds act as a host for pests and diseases
- d) Provision of winter ground cover.

please see over.....

Candidate name

Candidate number

Centre name

Question 7

A plant has broad dark green leaves.

Which of the following situations would this plant be most likely to thrive in?

- a) Coastal, exposed
- b) Sheltered, shade
- c) High altitude, open
- d) Low lying, dry.

Question 8

A staff handbook contains the following statement: “any unwanted physical, verbal or nonverbal conduct that has the purpose or effect of violating a person’s dignity or creating an intimidating, hostile, degrading, humiliating or offensive environment for them.”

What behaviour is the staff handbook referring to?

- a) Discrimination
- b) Victimisation
- c) Harassment
- d) Grievance.

Question 9

A gardens manager is assessing a hazardous task.

Which is the **first question** to consider?

- a) Have staff been trained to carry out hazardous tasks?
- b) Is there suitable personal protective equipment (PPE)?
- c) Can the hazard be isolated?
- d) Can the hazard be eliminated?

please turn over.....

Candidate name

Candidate number

Centre name

Question 10

Which of the following scientific names is written correctly?

- a) *quercus Robur*
- b) *quercus robur*
- c) *Quercus robur*
- d) *Quercus* 'Robur'.

Question 11

Which of the following terms is **not** related to the root system of a plant?

- a) Lamina
- b) Fibrous
- c) Tap
- d) Hair

Question 12

Which of the following is **not** a reason for adding organic matter to the soil?

- a) To improve the soil structure
- b) To increase activity of soil organisms
- c) To improve soil aeration
- d) To improve the soil texture

please see over.....

Candidate name

Candidate number

Centre name

Question 13

Which one of the following is an organic bulk constituent of growing media?

- a) Perlite
- b) Rockwool
- c) Sand
- d) Coir.

Question 14

Ferns are included within which major plant group?

- a) Angiosperms
- b) Gymnosperms
- c) Bryophytes
- d) Pteridophytes

Question 15

Evergreen shrubs are often sold rootballed.

Which of the following statements is **incorrect**?

- a) They often establish quicker than container grown plants
- b) They are cheaper to produce than container grown plants
- c) They have a lower water footprint than container grown plants
- d) They have a lower plastic footprint than container grown plants.

please turn over.....

Candidate name

Candidate number

Centre name

Question 16

What is the main purpose of the fence shown in the photograph below?



- a) To prevent squirrel damage
- b) To prevent access by garden visitors
- c) To prevent wind damage to plants
- d) To prevent rabbit damage.

Question 17

Which of the following is a male part of a flower?

- a) Anther
- b) Stigma
- c) Style
- d) Ovary

please see over.....

Candidate name

Candidate number

Centre name

Question 18

Which of the following is the function of a typical leaf?

- a) Attracts insects for cross pollination
- b) Transports carbon dioxide to the roots
- c) Converts magnesium to potassium
- d) Uses light to manufacture carbohydrate.

Question 19

Which of the following is the best method to improve soil aeration?

- a) Incorporation of a straight fertiliser
- b) Cultivating soil in dry conditions
- c) Incorporation of composted organic matter
- d) Cultivating soil in wet conditions.

Question 20

Which of the following is a physical method of weed control?

- a) Spraying with herbicide
- b) Practicing crop rotation
- c) Using ground cover plants
- d) The use of a strimmer.

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 (10 marks)

A garden is being run on sustainable horticultural principles. An area with high populations of perennial and annual weeds is to be planted.

a) Name **two** annual weeds.

.....

.....

b) Name **two** perennial weeds.

.....

.....

c) State **three** advantages of weeds in sustainable gardens.

.....

.....

.....

.....

.....

.....

d) List **one** way that weeds can negatively influence the establishment of new plants.

.....

e) List **two** ways that weeds can positively influence the establishment of new plants.

.....

.....

MARKS

2

2

3

1

2

please see over.....

Candidate name

Candidate number

Centre name

Total Mark

Question 2 (8 marks)

MARKS

a) Explain the difference between soil texture and soil structure.

2

.....

.....

.....

.....

.....

.....

b) A small horticulture enterprise is to be set up to produce plants organically.

Explain **THREE** distinct ways in which the development of a Soil Management Plan could aid the effective management of the soil's organic matter content.

6

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

please turn over.....

Total Mark

Candidate name

Candidate number

Centre name

Question 3 (5 marks)

MARKS

A new garden is being planted in autumn 2023.

- a) State **TWO** maintenance tasks that should be undertaken in the first 12 months after planting.

2

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

- b) Explain how the concept of Best Practice can be used to ensure that these tasks are undertaken efficiently.

3

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

please see over.....

Total Mark

Question 4 (8 marks)

MARKS

- a) Name **ONE** piece of legislation that relates to Equality and Diversity within professional horticulture.

1

- b) You have been promoted to Assistant Team Leader in a small garden that is open to the public. You have been asked to assist with recruiting a new junior team member.

You have been asked to suggest some text for the job advert.

- i) Explain why you must not specify certain age groups for the role.

2

- ii) In addition to age, list **THREE** other 'protected characteristics' that you must not discriminate against.

3

- c) State **TWO** advantages of 'inclusive cultures'.

2

please turn over.....

Total Mark

MARKS

Question 5 (7 marks)

a) Discuss the survival advantages that an annual life cycle offers to plant species.

4

.....

.....

.....

.....

.....

.....

.....

.....

b) State **TWO** ways in which climate change could affect the successful cultivation of a **NAMED** ornamental annual plant in a garden setting.

3

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

MARKS

Question 6 (5 marks)

a) Describe the value of the RHS Award of Garden Merit (AGM) when specifying plants.

4

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

b) State what is meant by 'clonal selection'.

1

.....

.....

.....

.....

please turn over.....

Total Mark

Candidate name

Candidate number

Centre name

Question 7 (7 marks)

MARKS

Some of the plants in your garden have been diagnosed with an iron deficiency.

- a) How does an iron deficiency affect the appearance of the leaves?

2

.....

.....

.....

.....

- b) Name **one** plant that can commonly show these symptoms.

1

.....

- c) Suggest why this deficiency could occur.

2

.....

.....

.....

.....

- d) State why iron is important for plant growth.

2

.....

.....

.....

.....

End of section B.

Please turn over and continue to Section C.

Total Mark

Candidate name

Candidate number

Centre name

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.

THIS PAGE IS DELIBERATELY BLANK

please see over.....

Candidate name

Candidate number

Centre name

Question C1

Garden Health Plans have been developed to offer a more holistic approach to plant health than Integrated Pest Management (IPM) plans.

Using your knowledge of Plant Science, Plant Health, Sustainability and Best Practice discuss the advantages that Garden Health Plans offer the horticulturist.

Question C1

Garden Health Plans have been developed to offer a more holistic approach to plant health than Integrated Pest Management (IPM) plans.

Using your knowledge of Plant Science, Plant Health, Sustainability and Best Practice discuss the advantages that Garden Health Plans offer the horticulturist.

Question C1

Garden Health Plans have been developed to offer a more holistic approach to plant health than Integrated Pest Management (IPM) plans.

Using your knowledge of Plant Science, Plant Health, Sustainability and Best Practice discuss the advantages that Garden Health Plans offer the horticulturist.

Total Mark

Question C1

Garden Health Plans have been developed to offer a more holistic approach to plant health than Integrated Pest Management (IPM) plans.

Using your knowledge of Plant Science, Plant Health, Sustainability and Best Practice discuss the advantages that Garden Health Plans offer the horticulturist.

Candidate name	Candidate number	Centre name
----------------	------------------	-------------

Candidate name	Candidate number	Centre name
----------------	------------------	-------------

Candidate name	Candidate number	Centre name
----------------	------------------	-------------

Question C2

You are involved in ordering the plants for a landscape design project.

Describe how the environmental impact of the project can be reduced by applying sustainable thinking.

Question C2

You are involved in ordering the plants for a landscape design project.

Describe how the environmental impact of the project can be reduced by applying sustainable thinking.

Question C2

You are involved in ordering the plants for a landscape design project.

Describe how the environmental impact of the project can be reduced by applying sustainable thinking.

Total Mark

[illegible][illegible][illegible]

Question C3

Describe the process of photosynthesis.

Explain how different environmental factors can be optimised to maximise photosynthesis in **named** horticultural settings.

Discuss how a changing climate could impact on the process of photosynthesis.

Question C3

Describe the process of photosynthesis.

Explain how different environmental factors can be optimised to maximise photosynthesis in **named** horticultural settings.

Discuss how a changing climate could impact on the process of photosynthesis.

Question C3

Describe the process of photosynthesis.

Explain how different environmental factors can be optimised to maximise photosynthesis in **named** horticultural settings.

Discuss how a changing climate could impact on the process of photosynthesis.

Question C3

Describe the process of photosynthesis.

Explain how different environmental factors can be optimised to maximise photosynthesis in **named** horticultural settings.

Discuss how a changing climate could impact on the process of photosynthesis.

Total Mark

Candidate name	Candidate number	Centre name
----------------	------------------	-------------

[illegible][illegible]

Question C4

‘The newly planted walled garden will display a wider range of trees and climbing plants suitable for use in a smaller garden.’

Describe, using **named** plant examples, the range of different staking and support systems that could be used in this new garden area.

Evaluate the proposed staking and support systems against a range of criteria to include sustainability, plant establishment and plant health.

Question C4

‘The newly planted walled garden will display a wider range of trees and climbing plants suitable for use in a smaller garden.’

Describe, using **named** plant examples, the range of different staking and support systems that could be used in this new garden area.

Evaluate the proposed staking and support systems against a range of criteria to include sustainability, plant establishment and plant health.

Question C4

‘The newly planted walled garden will display a wider range of trees and climbing plants suitable for use in a smaller garden.’

Describe, using **named** plant examples, the range of different staking and support systems that could be used in this new garden area.

Evaluate the proposed staking and support systems against a range of criteria to include sustainability, plant establishment and plant health.

Question C4

‘The newly planted walled garden will display a wider range of trees and climbing plants suitable for use in a smaller garden.’

Describe, using **named** plant examples, the range of different staking and support systems that could be used in this new garden area.

Evaluate the proposed staking and support systems against a range of criteria to include sustainability, plant establishment and plant health.

Total Mark

Candidate name	Candidate number	Centre name
----------------	------------------	-------------

Candidate name	Candidate number	Centre name
----------------	------------------	-------------

Candidate name	Candidate number	Centre name
----------------	------------------	-------------

**©These questions are the property of the Royal Horticultural Society.
They must not be reproduced or sold.**

The Royal Horticultural Society, Wisley, Woking, Surrey GU23 6QB.
Charity Registration Number: 222879/SC038262

Candidate name

Candidate number

Centre name