

## RHS Qualifications

**Examination:** RHS Level 2

Unit: Unit 2 Examination date: Unit 2

## **General Introductory Comments**

Examiners' comments are produced by RHS Qualifications following each examination series.

RHS Qualifications will publish an annual report, to share statistical information relating to candidate performance.

The Examiners' comments included in this report are intended to help candidates and centres to develop an understanding of the requirements of the RHS Level 2 examinations. This is achieved through a review of candidate responses indicating key areas of strength, while also considering areas where candidates demonstrated a weaker understanding of Topic areas, or where there was evidence of gaps in their knowledge.

The RHS Level 2 examination papers are designed to assess the contents of the Qualification Specification according to Ofqual's level descriptors.

At Level 2 these state that candidates should:

- possess a knowledge and understanding of facts, procedures and ideas within the field of horticulture
- be able to complete well defined tasks and address straightforward problems
- be aware of a range of information that is relevant to horticulture and demonstrate an ability to interpret relevant information and ideas
- be able to use relevant information to inform actions
- be able to apply their knowledge to a variety of contexts.

Candidates who scored high marks in the June 24 Level 2 examination:

- demonstrated a high level of knowledge and understanding of facts (AO1)
- could apply information and ideas to new contexts (AO2)
- could discuss, and address straightforward problems (AO2)
- could demonstrate holistic/integrated knowledge of the 4 Qualification-wide outcomes and the 4 Topic areas considered in Unit 2.

## Overview of Examination

## Levels of demand

Questions were set at three levels of demand within this paper.

Questions that require a recall of basic factual knowledge are classified as being low demand.

Questions that require the recall of more technical concepts or the application of knowledge are classified as **medium demand**.

Questions that require the recall of advanced technical concepts, the application of these concepts and the integration of these concepts across topics, are classified as **high demand**.

## General comments

An analysis of scripts has indicated that strong candidate responses shared many common characteristics:

- used correct horticultural terminology
- provided responses that matched the requirement of the question
- named appropriate horticultural situations
- demonstrated sound knowledge of horticultural practices
- provided correctly formatted scientific plant names
- provided logical arguments
- gave the appropriate number of responses, e.g. name two...

An analysis of scripts has indicated that weaker candidate responses also shared many common characteristics:

- provided responses that did not directly meet the requirement of the question
- provided insufficient detail
- named inappropriate or partially appropriate horticultural situations
- were unable to explain or define terms
- confused fundamental knowledge, for example dormancy mechanisms
- stated common, or incorrect names, when providing plant examples
- provided partial responses in long form answers.

## Qualification specification and Guidance Document

The Qualification specification outlines the curriculum that candidates will be examined on. A Guidance Document is freely available from Quartz and RHS Qualifications. This document was developed to provide centres with additional guidance with regards to the interpretation of the Assessment Outcomes in terms of breadth and depth that is appropriate to a Level 2 qualification.

It should be noted that the Guidance Document is not intended to be a comprehensive guide to teaching and learning. Instead, it is designed to provide examples of some of the key areas contained within an Assessment Outcome. As an example, where an Assessment Outcome in the Qualification Specification formally lists 5 areas that should be included, the Guidance Document may only unpack one of these areas as an example. The centre is then expected to apply the same level of breadth and depth provided in the exemplar to the other areas defined in the Assessment Outcome.

The next review of the Guidance Document will be published for the 2024 teaching year during October. The review ensures the currency and validity of horticultural thinking contained in the document.

## Section A

Questions 1 - 20

## General comments on Section A

Forced answer questions are designed to test candidate's knowledge and understanding of the concepts covered in the 4 Topics and the 4 Qualification-wide outcomes that make up this unit.

Many candidates were able to score high marks in Section A, indicating a sound grasp of horticultural knowledge, and the application of good examination technique.

Some centres have asked for the correct answers for Section A questions to be made available. As all Section A questions are part of a bank of questions, which may be used in future examination series it is not appropriate to publish the correct answers.

Candidates and centres are reminded of good examination technique with regards to forced answer questions:

- Carefully read the question
- Underline any key or important words
- Score through inappropriate answers
- Select the correct answer to be recorded on the response grid.

#### Section B

Each question is considered separately.

## Question 1

This question required candidates to demonstrate their knowledge with regards to dormancy mechanisms, with the opportunity to apply this knowledge to state how dormancy in seed is overcome in horticultural practice.

Part a) i) required candidates to state a dormancy mechanism found in seeds, with part b) i) requiring the candidate to state one further distinctly different dormancy mechanism.

Stronger candidate responses included stating a physical dormancy mechanism, for example the seed having a hard impermeable seed coat. These candidates then selected a distinctly different mechanism for their second response, stating for example a physiological mechanism, for example an immature embryo.

Weaker candidate responses often did not use the technical terms, for example, physical or physiological, often simply describing the process of breaking dormancy. An example of such a response would be the candidate stating stratification, which is a method of overcoming dormancy and not a dormancy mechanism.

In both part a) ii) and part b) ii) candidates were required to provide named plant examples appropriate to the dormancy mechanism named.

Stronger candidate responses stated an appropriate plant, using scientific naming principles.

Weaker candidate responses, either omitted this information, or stated incorrect plant examples, or used common plant names.

In both part a) iii) and part b) iii) candidates were required to state a method for overcoming dormancy.

Stronger candidate responses stated techniques to overcome dormancy mechanisms, including scarification and stratification.

Weaker candidate responses often did not use technical terminology and stated temperature or suggested placing seed in a freezer. These are not methods of overcoming dormancy and did not contain the level of technical detail that is required at Level 2.

This question required candidates to provide the name of a thorned plant.

Stronger candidate responses named a suitable plant, the most commonly named plants being *Crataegus monogyna or Rosa rugosa*.

Weaker candidate responses either did not provide correct examples or used common names.

It is worth noting at this point that the Level 2 Qualification Specification is written to equip candidates with the botanical knowledge that a Level 2 horticulturist should be familiar with to be able to carry out their role. The confusion between a prickle and thorn would not impact on operational horticulture, and so a broader definition of the term thorn was accepted.

Candidates were then required to apply their knowledge of plant adaptations to state two advantages that thorns provide to plants.

Stronger candidate responses stated advantages such as protection against herbivory, along with support with climbing.

Weaker candidate responses often included the protection against herbivory. These candidates often incorrectly stated that thorns reduce water loss in the plant or stated that thorns provide protection from pests and pathogens. As herbivores can be considered to be pests, these responses were fully credited, however thorns themselves offer no protection against pathogens. Some weaker candidate responses simply omitted to state a second advantage demonstrating gaps in knowledge.

Part c) was well answered with the majority of candidates correctly stating the use of gardening gloves, or goggles as eye protection.

Part d) was again well answered with the majority of candidates correctly stating the role of thorned plants in the protection of nesting birds.

In this question candidates were required to list three types of stakeholders that could be involved in a community growing project.

Strong candidate responses demonstrated a clear understanding of the range of stakeholders that could be involved, including:

- volunteers
- local government/local council
- the National Lottery or other major funders
- local businesses

Weaker candidate responses failed to demonstrate the level of knowledge appropriate at Level 2. Some candidates stated, for example, the public or charities, while other candidates suggested local councillors, the local council and social services, all of which are examples of the local council, and so only one mark was awarded, unless further justification was provided in the response.

Part b) of this question required candidates to suggest four ways that a community growing project could become more environmentally sustainable.

The majority of candidates gave strong responses, suggesting:

- on site composting
- re-use of plastic plant pots
- reduction in water usage
- elimination of pesticides
- elimination of equipment requiring fossil fuels

Weaker candidate responses often confused environmental sustainability with biodiversity, suggesting planting to benefit pollinators, while other candidates discussed economic sustainability, suggesting income generation through the sale of produce.

This question assesses candidate's knowledge of how horticultural practices can support the environment and ecosystems and the creation of habitats in both Topics 3 and 4.

Part a) required candidates to state three environmental benefits of community wildlife gardens.

Strong candidate responses stated:

- the creation of habitats
- the mitigation of water run off
- the conservation of endangered species.

Candidate responses that stated mitigating the effects of climate change, along with the improvement of urban environments, for example through the cooling use of plants were fully credited.

Weaker candidate responses often stated one or two benefits, but often repeated points, for example stating the creation of habitat as benefit 1, but then stating the provision of nesting spaces or food for pollinators as second or third benefits. The definition of habitat encompasses the provision of food and shelter and so these were not considered to be sufficiently distinct to be credited with marks.

In part b) all candidate responses that stated a UK BAP species were credited with a mark. Some candidates however lost marks by naming species that are not listed as UK BAP species indicating gaps in knowledge.

Part c) of the question required candidates to describe a habitat that could be created within a wildlife garden to meet the requirements of the named BAP species. All correct responses were credited with one mark for stating the habitat with the second mark available being awarded for a developed point, as the command word was 'describe'. Many weaker candidate responses were insufficiently detailed to be awarded a second mark. Other weaker candidate responses gave inaccurate or incorrect information, for example the provision of tree canopy for a dormouse nest. This species nests at 1.2-1.5 m and so tree canopy is not an appropriate habitat.

The final part of the question required candidates to apply their knowledge of food webs, by stating how the presence of their named species could affect the garden food web. Candidates who discussed appropriate primary/secondary/tertiary consumers were awarded full marks. Weaker candidate responses were often incorrect, or only partially correct, for example stating that hedgehogs would eat pollinators. Other responses only stated what the named species consumed, rather than considering its role as prey in the food web.

This question required the candidate to define the term ecosystem services.

Very few candidates were able to offer a full definition of ecosystem services demonstrating a significant gap in knowledge for this important term. Candidates should be able to offer full definitions of terms contained within the Qualification Specification to be able to demonstrate basic knowledge and understanding consistent with AO1.

Candidates who understood that ecosystem services benefit people, provided strong answers in this part of the question. Suitable ecosystem services provided could include:

- water run off or flood alleviation
- the promotion of healthy soils
- photosynthesis
- mental wellbeing
- tourism
- pollination.

Weaker candidate responses did not state formal ecosystem services tending to discuss the provision of habitat for wildlife.

This question required candidates to name four wildflowers or spontaneous plants (weeds) and then to name four beneficiaries. An example was provided to guide candidates with regards to the required response.

Candidates who repeated this example in their responses were not credited with marks.

Strong candidate responses included specific named plants and specific named beneficiaries. For example:

- Urtica dioica as fodder for comma caterpillars
- Hippocrepis comosa (horeshoe vetch) and Adonis blue butterfly (caterpillar)
- Lonicera periclymenum and White Admiral butterfly (food source for caterpillar)
- Frangula alnus (alder buckthorn) and Brimstone butterfly (caterpillars)

All candidate responses were researched and where a relationship between the plant and the beneficiary could be established full marks were awarded.

Weaker candidate responses often named ornamental/non-invasive garden plants which could not be regarded as wildflowers or spontaneous plants (weeds) along with the beneficiary. Other responses named only a genus, such as 'Digitalis' without a species. In this example there are many Digitalis species that are not UK wildflowers, therefore no marks could be awarded. Some responses used only common names for the wildflowers or spontaneous plants (weeds) reducing the mark that could be awarded.

This question was designed to assess knowledge and understanding of edible landscapes by requiring candidates to demonstrate their knowledge of basic structures and training techniques used in these settings.

Part a) of this question provided an image of a crop support constructed without the use of garden canes. Candidates were asked to state one benefit of this approach. The majority of candidates discussed the environmental impact of garden cane harvest and transport. Weaker candidate responses demonstrated a lack of understanding regarding the environmental impact and carbon footprint of garden cane use.

Part b) of this question provided an image of fruit trees grown as cordons.

Very few candidates were able to identify this commonly used growing system used in edible landscapes.

Part c) of this question provided an image of fan training.

Many candidates were able to state fan, as the training technique being used in this edible landscape.

Part d) of this question provided an image of fruit trees grown as espaliers.

Many candidates were able to state espalier, as the training technique being used in this edible landscape.

Weaker candidate responses often confused cordon and espalier, or offered no response to parts b), c) and d) of the question indicating gaps in knowledge.

Part a) of this question required candidates to name the horticultural technique that had been applied to the cultivation of plants in the provided image.

Strong candidate responses correctly identified the technique as topiary.

Weaker candidate scripts either offered no response or an incorrect response.

Part b) of this question required candidates to state the century in which this technique was introduced to British gardens. Correct candidate responses stated the 17<sup>th</sup> century. The most common incorrect response being the 18<sup>th</sup> century.

Part c) of the question required candidates to name three plants suitable for use in topiary.

Correct candidate responses included:

Taxus baccata Buxus sempervirens Ilex crenata

Incorrect candidate responses included deciduous plants, which are not suited for topiary use.

## Section C

Section C candidate responses are graded against the assessment ladder, which is on the next page of this report. Candidates and centres are advised to review the ladder as this indicates how the assessment decisions are made, when grading long form responses.

Candidate performance in Section C ranges from those candidates who:

- were prepared to produce long form responses
- carefully planned their answers, including key points
- approached the question logically
- shared horticultural knowledge that was technically correct and to the required depth of knowledge for Level 2
- demonstrated a full and holistic knowledge of the topic areas and Qualification-wide outcomes.

## through to candidates who:

- produced very short responses which did not provide the required level of depth and breadth
- provided responses which were unplanned and unstructured
- provided responses that gave a framework, but which did not provide the required level of detail
- picked up on certain words in the question, and wrote all they knew about these words, rather than answering the question.

In addition to the assessment ladder, candidate responses are also reviewed against the criteria set out below:

## Indicative content

- Strength of response
- Integration
- Horticultural knowledge.

## Strength of response:

Strong candidate responses:

- developed a logical argument to answer the question
- drew on reliable information sources
- were relevant to the question
- expressed clarity of thought
- demonstrated knowledge of horticultural practices.

## Integration:

Candidate responses should integrate with other relevant areas of the syllabus.

## Further guidance:

Further guidance on Section C will be issued to Centres in December 2024.

# Assessment ladder (for information)

Band	Mark range	Summary	Description
4		Fully developed (Total)	A highly detailed, comprehensive, fully relevant response, addressing all aspects of the question
			No irrelevant or incorrect material or observations at the top end of the mark range: otherwise only very minor errors/omissions (which do not detract from an otherwise strong response)
			Full integration/clear links demonstrated with other appropriate topics as required: a holistic approach
			Advanced current professional horticultural knowledge/principles demonstrated (and evidence of advanced material beyond the specification at the top end of mark range)
			Consistent use of correct and appropriate technical language.
3	9 -11	Mainly developed (Solid)	A reasonably detailed and fairly comprehensive response, with mostly relevant observations, addressing most of the key elements of the question
			Some minor evidence of irrelevant or incorrect material or observations (in what is otherwise a good response), with occasional lack of detail/omissions at times
			Secure evidence of some appropriate integration with other topics but some linked topic areas are occasionally overlooked or incorrect associations are made: a partially holistic approach
			Current professional horticultural knowledge/principles demonstrated most of the time, with occasional errors, but largely appropriate explanations and application
			Correct and appropriate technical language demonstrated most of the time, with some minor errors.
2	6 - 8	Rudimentary (Basic)	A largely basic response with some relevant observations, addressing some key elements of the question
			Some significant evidence of irrelevant or incorrect material and frequent lack of detail, with some key areas overlooked
			Occasional evidence of correct integration with other topics, but many areas are overlooked and incorrect associations made: little evidence of a holistic approach
			Current professional horticultural knowledge/principles demonstrated some of the time, but with frequent errors, and only basic explanations or application
			Correct and appropriate technical language only partially demonstrated but limited. Some key errors.
	0 - 5	Undeveloped (Unsatisfactory)	A largely poor response with few relevant observations, addressing few of the key elements of the question
1			Material is largely irrelevant or incorrect and lacking in any detail, with many key areas overlooked
			No, or very little evidence of correct integration with other topics, with many areas overlooked and incorrect associations made: no evidence of a holistic approach
			No or little evidence of current professional horticultural knowledge/principles demonstrated, with poor or incorrect explanations or application
			Little (if any) technical language demonstrated. Often incorrect. Key errors.

This question required candidates to discuss the suitability of formal planting in domestic garden situations. Candidates were further required to make reference to four key areas:

- appropriate features and plants
- planting styles
- maintenance
- environmental considerations.

Candidates who scored marks in the higher bands:

• followed the four reference points stated in the question.

Appropriate features and plants

• provided a clear understanding of formal gardens' design principles, such as the use of symmetrical layouts, statuary, formal ponds and fountains etc.

## Planting Styles:

 Planting style was directly linked to appropriate features and plants, with clear and appropriate examples provided, for example the gardens framed through topiarised hedging using *Taxus baccata* or the use of pleached trees to draw the eye.

## Maintenance:

 Strong responses demonstrated an advanced understanding not only that maintenance requirements of formal gardens are relatively high, but demonstrating an understanding of the reasons for this; for example, the requirement for precise clipping and weed control.

## Environmental considerations:

 Strong responses discussed a wide range of environmental considerations from the emissions from machinery operation through to the limited range of plant material, the need for order and tidiness, and the impact of these on habitat reduction.

Particularly strong candidate responses at the upper end of the assessment band also considered:

• the wider Qualification-wide outcomes, taking their existing knowledge and applying this to the question. Examples of this approach included fact-based discussions around whether formal planting must always be less sustainable and high maintenance. Is fundamental rethinking necessary?

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 This rethinking included reference to reduced biodiversity due to habitat disturbance and close mowing or hedge trimming, with possible mitigations by applying new thinking to formality.

## Candidates who scored marks in the lower bands:

- did not follow the four reference points stated in the question
- often provided a basic framework for their response, but then failed to develop points to demonstrate their knowledge
- described formal gardens correctly, but did not demonstrate understanding of application by applying this knowledge to domestic garden situations
- did not consider, within domestic gardens where informality and formality meet, and the possibility of gradations of formality
- did not consider the tension between maintenance and environmental issues
- did not provide named plant examples.

This question required candidates to explain how plant adaptations allow plants to colonise garden areas. Candidates were then further required to discuss the impact of plant colonisation on garden maintenance and biodiversity.

Candidates who scored marks in the higher bands:

- fully responded to the requirements of the question
- related their knowledge of plant adaptations to the colonisation of garden areas
- explained the advantage and the role of the adaptation in this colonisation process
- further explored, considered and explained the impact of plant colonisation on garden maintenance with specific examples
- further explored, considered and explained the impact of plant colonisation on garden biodiversity with specific named examples
- considered a broad range of adaptations that allowed for the developed points relating to colonisation, maintenance, and garden biodiversity to be considered
- included both seed and vegetative adaptations, with plant examples
- gave detailed consideration and analysis, explaining, the role of dehiscent seed adaptations of *Cardamine hirsuta* to the effective spreading of seed and the ephemeral aspects of having to constantly maintain and weed areas
- discussed the soil seed bank and the concept of dispersal in time, where seed can remain dormant in the soil for many years (due to increased CO<sub>2</sub> levels at lower depths) until they are brought to the surface where the oxygen levels are increased which, along with light which can trigger germination
- fully integrated their knowledge of other topic areas into their responses
- discussed biodiversity relating this aspect of garden management to the value of plants as food sources (seed, fruits, nectar) along with wider aspects relating to the provision of habitat
- explained the importance of controlling competitor plants through the removal of seedlings before flowering and seeding, and the complete removal of rhizomes from soil; thus, applying their knowledge of plant adaptations to horticultural techniques.
   Exceptional candidates linked this practice to trials, and published work as examples of Best Practice.

It is noted that many candidates failed to consider the benefits of colonisation with regards to maintenance, for example, the ability of some species to create natural ground cover or to naturally regenerate in ecological and in prairie style plantings.

## Candidates who scored marks in the lower bands:

- provided responses that related to their knowledge, rather than focusing on the requirements of the question
- demonstrated a poor understanding of plant adaptations and the colonisation of garden areas, confusing these with general competitive advantage.
- were unable to explain at the required level of detail, the advantages and the role of the adaptations in the colonisation process
- did not satisfactorily link their response to garden maintenance
- made general comments with no specific examples to demonstrate knowledge and mastery of the topic being considered
- failed to consider the impact of plant colonisation on garden biodiversity
- confused concepts such as totipotency with plant adaptations
- did not provide named plant examples.

It is noted that many candidates did not think through the requirements of the question, and consider the basic range of common 'problems' gardeners face with ephemeral and annual species and their seedbanks, before considering how this might be mitigated by adopting minimal cultivation practices, (for example 'no dig'), mulching etc. To rectify these weaknesses, it is recommended that candidates are provided with the opportunity to practice and develop their skills when undertaking long form answer questions.

This popular question set a scenario by providing an image from Incredible Edible Brighouse as an example of a community project growing food in urban spaces.

Candidates were then required to provide a long form response that explains the range of benefits associated with this type of community based enterprise.

## Candidates who scored marks in the higher bands:

- provided well developed responses that indicated a considerable depth of knowledge
- linked their answer to a wide range of topic areas especially Equality and diversity and Sustainability
- demonstrated a clear knowledge and understanding of the topic
- considered the links between edible landscapes and community kitchens
- explained multiple benefits, these included:
  - a reduction in social isolation/social exclusion
  - increased wellbeing
  - the building of resilient communities
  - skill sharing and acquisition
  - specific (named) mental health benefits
  - physical exercise
  - the production of healthy food
  - the promotion of healthy eating
  - provision of fresh food.

The strongest candidate responses, integrated with a range of sustainable practices. These responses also discussed the opportunities to increase biodiversity. Some responses made use of the three pillars of sustainability, linking to the local economy, and the importance of inclusion. It was particularly pleasing to note that the strongest candidate responses included statistics from relevant reports which could be verified, for example the reduction of littering and antisocial behaviour because of urban greening.

Candidate responses that scored marks in the lower bands:

- provided poorly developed unstructured responses that demonstrated only a limited or partial knowledge of the area
- provided unsatisfactory or basic understanding, which was demonstrated through insufficient detail within their responses
- provided limited or no integration with key Topic areas, for example Planting Styles (edible landscapes), Sustainability, Equality and diversity
- provided partial answers which were limited to the health and wellbeing aspects of such projects

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- did not consider the wider benefits of working outside
- did not consider the benefits from volunteering and belonging
- did not consider the horticulture behind projects, to include what they grow, how they grow and how the site is managed
- made very simple or generalised statements with no explanation or demonstration of understanding.

This question required candidates to respond to a scenario which related to making a garden more climate resilient.

Candidate responses that scored marks in the higher bands:

- discussed and defined the meaning of climate resilience
- considered the ways that the climate is changing
- stated the expected changes to the UK climate
- provided specific and detailed comments
- made reference to the RHS Gardening in a Changing Climate report
- related their responses to resilience, rather than mitigation of climate change
- integrated their answer, bringing examples from multiple topic areas and Qualification-wide outcomes
- suggested a wide range of initiatives that could be used to increase climate resilience:
  - reducing impermeable surfaces to reduce water run off during high rainfall events
  - creating rain gardens, with an appropriate level of technical detail
  - creating swales, with an appropriate level of technical detail
  - recommending plants that are resilient to both drought and periods of high rainfall
  - changing soil management practices
  - the use of green roofs
  - the use of trees to provide shade
  - the potential impact and management of novel, new plant pathogens.

Candidate responses that scored marks in the lower bands:

- did not demonstrate a satisfactory knowledge relating to climate change
- provided general comments, rather than providing detailed discussions
- provided basic comments relating to plant selection
- did not link plant resilience to both drought and areas of high rainfall depending on season
- limited their responses to temperature and drought as the only areas of focus
- focused their response on climate mitigation rather than climate resilience.

Some candidates suggested that the concept of lawns needed to be reconsidered. This approach could consider the adoption of native grass species for climate resilience. Some candidates suggested the use of gravel/grit as an alternative. This is however not regarded as good practice from a sustainability perspective as the gravel comes from finite resources, requires quarrying, and transportation. Candidates suggesting the reuse of materials to create alternatives to lawns were fully credited.

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A key point missed by many candidates was that our current ideas of how a garden should look, particularly with regards to lawns is not sustainable now, let alone if subject to climate change. There was also an assumption that the installation of a water butt would provide an inexhaustible supply of water e.g. for lawns.