RHS Qualifications

Examination:	RHS Level 3
Unit:	Unit 1
Examination date:	June 24

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 Examiner's comments included in this report are intended to help candidates and centres to develop an understanding of the requirements of the RHS Level 3 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 3 examination papers are designed to assess the contents of the Qualification Specification according to Ofqual's level descriptors.

At Level 3 these state that candidates should:

- demonstrate factual, procedural, and theoretical knowledge
- be able to interpret, evaluate, and apply information and ideas
- be able to discuss, a range of perspectives and approaches
- demonstrate the ability to resolve complex and non-routine problems
- review how effective methods and actions have been
- demonstrate responsibility for supervising or guiding others.

Candidates who scored high marks in the June 24 Level 3 Unit 1 examination:

- demonstrated factual, procedural, and theoretical knowledge (AO1)
- could interpret, evaluate, and apply information and ideas (AO2)
- could discuss, a range of perspectives and approaches (AO2)
- demonstrated the ability to resolve complex and non-routine problems (AO2/AO3)
- could demonstrate holistic/integrated knowledge of the four Qualification-wide outcomes and the four Topic areas considered in Unit 1.

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, procedural and theoretical knowledge are classified as being **low demand**.

Questions that require the interpretation, evaluation and application of knowledge are classified as **medium demand**.

Questions that require integrated thinking across topics, the resolution of complex and non-routine problems, and discussions on differing perspectives or approaches are classified as **high demand**.

General comments

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

- demonstrating the ability to read and interpret information
- demonstration of a secure knowledge of legislation as it relates to horticultural practices
- summarised key concepts and ideas as required by the question
- demonstrated the ability to evaluate and apply horticultural practices
- were able to discuss a range of perspectives
- successfully applied knowledge to new scenarios and situations
- provided full, detailed and well-structured long form responses in Section C
- integrated their long form responses into a number of relevant Topics, and Qualification-wide outcomes
- provided responses that were logical
- developed coherent arguments.

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

- were only partially able to read and interpret information
- offered partial responses to some questions, consistent with poor time management
- demonstrating a limited or partial understanding of elements
- did not offer a range of perspectives in their responses
- focusing on one key term in the question, writing as much as possible on this part of the question
- did not integrate their long form responses into relevant Topics, and Qualification-wide outcomes.

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 3 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 five 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 four Topics and the four Qualification-wide outcomes that make up this unit.

At Level 3, these questions particularly relate to:

- the assessment of theoretical knowledge
- the ability to read and interpret information
- the ability to recall factual information
- the demonstration of procedural knowledge.

This section was well attempted by the majority of candidates, with a secure level of knowledge being displayed, suggesting that candidates were well prepared on the majority of the topics covered.

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 apply their knowledge of Health and Safety legislation to plant propagation settings.

Part a) of the question required candidates to name one distinct piece of Health and Safety legislation that relates to structures and buildings, the rooting environment, and materials storage.

Strong candidate responses correctly named a suitable piece of Health and Safety legislation.

Weaker candidate responses provided partially incorrect responses with respect to naming a suitable piece of Health and Safety legislation. (The year of acts of parliament or legislation was not required, but the correct naming of the legislation was required.)

Part b) of the question required the candidate to further apply their knowledge, as appropriate to level 3, by stating a distinct requirement that each piece of legislation named in a) places on a supervisor managing a plant propagation unit.

Stronger candidates were able to provide appropriate requirements, for example to ensure that all staff and volunteers are trained and deemed to be competent in manual handling.

Weaker candidate responses did not display the required level of knowledge and application, for example incorrectly stating that a supervisor should, to meet the requirements of the Health and Safety at Work Act (1974), ensure toilets in the propagation area are heated.

Question 2

This question assesses candidate knowledge relating to the Topic Heritage Horticulture along with the Qualification-wide outcomes: Equality and diversity and Best Practice.

Candidates were required to discuss two ways in which the principles of Equality and Diversity can be enhanced through the use of Best Practice when producing interpretation resources to engage visitors in heritage gardens.

Strong candidate responses:

- considered the way credible organisations tackle matters relating to Equality and Diversity by discussing initiatives including Prejudice and Pride (a collaborative project between the National Trust and the Research Centre for Museums and Galleries)
- discussed methods of engagement that were useful to include the use of audio recording devices in a wide range of languages, allowing access to interpretation for those with a visual impairment. Other candidates considered the use of specialist tour leaders, or the use of storytelling from a range of perspectives.

Weaker candidate responses:

- did not fully embrace the requirements of the question, often concentrating on accessibility to the site
- considered engagement/interpretation using irrelevant examples, thus demonstrating a limited or unsatisfactory level of knowledge and understanding of these three areas of the Qualification Specification.

Question 3

This question provided candidates with an infographic showing a range of ecosystem services.

Candidates were then asked to demonstrate their knowledge of this area by naming an ecosystem service from each of the four quadrants of the infographic (Regulating, Supporting, Cultural, and Provisioning) specifying one suitable plant species and then justifying the selection of this species.

Strong candidate responses:

- accurately named an ecosystem service
- named a suitable plant
- justified their selection by linking the plant directly to the ecosystem service, for example stating the ecosystem service Provisioning (food and drink) with a named fruit tree (*Malus domestica*) with the justification of apples in both food and drink production.

Weaker candidate responses:

- often correctly named the ecosystem service
- named plant examples using common names
- suggested inappropriate plants
- did not justify how the ecosystem service is supported by the named plant.

Question 4

This question assessed candidate's knowledge of micropropagation.

Part a) of the question required candidates to explain how micropropagation can be used to 'clean up' plant species to remove viral pathogens.

Very few candidates were able to fully explain that meristematic tissue is usually free from viral pathogens, and so using this tissue in micropropagation results in virus free propagules.

Part b) of the question required candidates to explain one other advantage of micropropagation.

The majority of candidates were able to explain that micropropagation can be used to produce a large number of propagules from a limited source of propagation material, or that micropropagation is often used professionally to propagate plants that do not root readily from other vegetative techniques.

Part c) of the question required candidates to describe how two named factors impact on the weaning of micropropagated plant material.

Strong candidate responses:

- related to environmental conditions, for example, light levels, relative humidity and water management within the growing media
- discussed relevant impacts on propagules, for example leaf tissue that is not fully developed scorching when exposed to high levels of light, or roots that are developing not being sufficient to meet the plants need in high temperature, and low relative humidity environments.

Weaker candidate responses for parts a) b) and c):

- did not address the question
- gave vague explanations
- did not state the factors or gave poor explanations relating to weaning
- some candidates named a suitable factor in part b), but did not develop the discussion to explain the impact of the factor in part c), so gaining partial marks.

Question 5

This question related to the history of horticultural spaces.

Candidates were supplied with a quotation from a historical document, and were asked to respond to this by explaining three ways that reports of this nature were catalysts for change in public horticulture.

Strong candidate responses clearly explained:

- that people lived in cramped conditions, breathing dirty air. Parks were developed to improve lives, providing people with both space and fresh air
- that reports of this nature led to the development of the garden city movement, to bring the joy of the countryside into cities
- that these reports led to initiatives such as the planting of urban trees, and the start of what is now known as urban greening.

Weaker candidate responses:

- discussed the development of organisations such as the Royal Horticultural Society, which was not in itself a change in public horticulture
- demonstrated weak, confused or partial understanding.

Question 6

Part a) of this question required candidates to state three distinct attributes that reliable sources of information should demonstrate.

Strong candidate responses succinctly stated:

- the reputation of the author
- the reputation of the organisation publishing the work
- the use of material from edited or peer reviewed publications.

Weaker candidate responses were vague and lacking in accuracy about the checks that are necessary to validate reliable sources of information.

In part b) of this question candidates were asked to name one reliable source of information for three scenarios.

Strong candidate responses stated specific sources of information that were appropriate and relevant to the scenario, for example, Plants of the World Online, English Heritage, and validated original plans and photographs with regards to garden management plans.

Incorrect candidate responses included the use of RHS Plant Finder for propagating an unfamiliar range of plants. This publication contains no specific information on plant propagation.

Question 7

This question required the candidate to provide an answer to the question, how does the concept of 'Spirit of the Age' impact on the historic development of a named garden style.

Candidates were expected, at Level 3, to develop highly detailed, comprehensive and fully developed responses that addressed all key aspects of the question.

Strong candidates responded well to this question.

Popular garden styles included English Landscape, Victorian gardens, and Arts and Crafts.

Strong candidate responses clearly linked historical events to the thinking or philosophy of the time, appropriate to the development of the named garden style.

For example, with reference to Victorian Gardens, strong candidates stated that this was a period of technological advance, leading to the development of heated glasshouses, which enabled the cultivation of exotic sub-tropical bedding. This was also a period of exploration and empire, with plant collectors bringing new and exotic plants into cultivation.

Weaker candidate responses often confused Spirit of the Age with Spirit of Place, resulting in incorrect responses.

Question 8

This question required candidates to discuss how digital tools and apps can be used to manage plant records and/or plant collections.

Candidates were expected, at Level 3, to develop highly detailed, comprehensive and fully developed responses that addressed all key aspects of the question.

Strong candidates responded to this question by:

- naming an appropriate digital system, for example BG Base
- explaining some of the main functions:
  - accession numbers
  - GPS positions/mapping features
  - verification of plant names
  - conservation status
  - health status
- linked these functions to the management of the plant collection

Weaker candidate responses often explained the concept of digital plant records, without giving examples of systems, or linking their use to managing plant collections.

Section C

Section C candidate responses are graded against the assessment ladder, which is on the next page of this report. (This is the same ladder that is used in the Level 2 examinations.) 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:

- demonstrated their factual, procedural and theoretical knowledge
- were able to interpret, evaluate and apply relevant information and ideas
- were prepared to produce long form responses
- could discuss relevant points from a range of perspectives if required
- could discuss a range of approaches if applicable
- approached the question logically
- demonstrated a full and holistic knowledge of the topic areas and Qualification-wide outcomes.

through to candidates who:

- produced brief responses which lacked the required level of detail
- 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.

Assessment ladder (for information)

Band	Mark range	Summary	Description
4	12 - 15	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.
1	0 - 5	Undeveloped (Unsatisfactory)	**A largely poor response with few relevant observations, addressing few of the key elements of the question** ☐ 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.

Question 1

This question was set in the context of a heritage garden undergoing a major renovation project. The question required candidates to discuss the range and the validity of sourcing information that garden managers should reference when planning major garden renovation projects of heritage gardens.

Strong candidate responses started with a process of defining and explaining key terms. This included considering basic questions such as what information is required, what information do we have, and what information is missing that we need to inform the renovation.

Strong candidate responses offered comprehensive accounts of the type and sources of information, both primary and secondary. This included:

- local record office
- word of mouth
- artifacts found on site
- festivals
- drawings
- site plans
- paintings
- literature.

Strong responses went on to consider the need for authentication and checking of reliability, for example, the quality of authors/reliability of sources. The value of these sources of information was critically discussed.

Weaker candidate responses were often vague and lacking in detail. A common trait of weaker responses was the candidate failing to consider or discuss the validity of the sources, often simply giving examples of sources they would trust, without explaining why.

Question 2

This question contained two quotations which were designed to allow the candidate to demonstrate cognitive skills to complete a task which was both well-defined but also complex and non-routine. The conflict described in the question is one that is currently under consideration by many practitioners.

In responding to this question candidates were expected to be able to draw upon their knowledge of horticultural sustainability and best practice, along with their knowledge of horticultural heritage to offer balanced insights.

The majority of candidates who tackled this question did so in a basic manner. The majority of responses acknowledged the conflict between historical integrity and sustainability at a basic level with key points stated but not developed as required at Level 3.

To gain a mark within Band 4 it was expected that candidates should:

- give a brief explanation/justification for both arguments
- develop some key points, to further consider/evaluate, for example the importance of heritage, the value of heritage to society and to the economy. While also stating the importance of sustainability with regards to horticultural practices and the three pillars of sustainability
- use examples from leading gardens (Best Practice) candidates could discuss areas where there is no conflict, indeed where there is synergy. This could include the consideration of the economic and social pillars of sustainability against heritage interpretation
- finally, the conflicts could be considered, for example the maintenance of a historic rose garden, that is on a sandy soil, requiring high fertiliser and high water inputs. The overriding case for heritage could be developed, with consideration given to how other areas of the garden could be developed from a sustainability perspective. The concept of net positive when aggregated over the whole of the site could be discussed and evaluated.

In questions of this nature at Level 3 candidates should be aware that there are no correct answers. These are genuine dilemmas that practicing garden managers face. In questions such as this, it is the approach, the defining of terms, the consideration of areas where there is little conflict between viewpoints, and the consideration of options where there are conflicts that are being assessed.

Markers are looking for:

- summaries of different perspectives
- detailed consideration of key points
- statements of areas where there is synergy rather than conflict

- differing perspectives and approaches to identify areas where heritage and sustainability can conflict
- perspectives from leading organisations and gardens
- consideration of concepts, for example net positive
- a summary discussing possible ways forward.

It is recommended that candidates practice answering questions of this nature.

Question 3

This question was designed to allow candidates to consider management practices (as appropriate to Level 3 study) in the management of a propagation facility. A scenario was provided to allow candidates to focus on key areas.

Stronger candidates considered a wide range of key areas in detail including:

- the propagation of perennials and woody plants, lower success rates over the previous two years for both seed and vegetative propagation
- strategic thinking with regards to the possible causes in this decline in efficiency, to include changes made in the last two or three years to key aspects such as personnel, sourcing of materials, storage of materials, staff training, and maintenance
- operational thinking with regards to the development and use of propagation protocols, and management practices to include the management of hygiene
- candidates were credited if they included their own knowledge, or that from other topic areas considering for example if there had been a transition to peat free growing media without a change in propagation protocols. Consideration with regards to the hygiene/health status of source material/parent material growing in the garden could be considered.

Weaker candidate responses lacked:

- the strategic overview
- the development of a framework of thinking
- detailed, fact-based reasoning
- the application of Best Practice.

Weaker candidate responses were often characterised by the identification and statement of a few minor factors, which were credited with marks, but which did not meet the requirements of Level 3.

Question 4

This question required candidates to relate their knowledge of how named garden designers are embracing sustainable gardening principles when combining plants to produce a range of ecosystem services.

While some candidate responses:

- named two designers
- summarised their planting style
- discussed the planting style with reference to:
    - pollinators
    - flood control
    - soil health.

Very few candidates fully responded to the question to be able to gain marks in the higher bands.

To gain marks in the higher bands candidates should be prepared to be able to:

- name garden designers who are embracing sustainable gardening principles and planting to support a range of ecosystem services. Suitable designers could include but not be limited to Nigel Dunnett/James Hitchmough/Piet Oudolf/Claudia West
- discussion of their approach/respective fields etc.
- discussed how the designers have embraced sustainable gardening practices, examples could include prairie plantings, rain gardens, wood pasture, steppe landscapes, roof gardens and green walls
- discussed the concept of combining plants to provide ecosystem services.

It is recommended that candidates practice answering questions of this nature.