RHS Qualifications
Examiner Comments

Examination:	RHS Level 2
Unit:	Unit 1
Examination date:	June 2025

General Introductory Comments

Examiners' comments are produced by RHS Qualifications following each examination series. They are intended to help students to prepare for RHS examinations by having a better understanding of the requirements of the paper. These comments are also intended to help tutors to understand the challenges that candidates may have in developing their responses to the questions.

There have now been multiple papers for the Level 2 examinations and all stakeholders are now familiar with the format, structure and demand of the papers.

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 and use relevant information and ideas to inform actions
- be able to apply knowledge, both to unfamiliar situations and by exploring links within and across Topics and Elements.

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; and which require the application of knowledge, both to unfamiliar situations and by exploring links within and across Topics and Elements are classified as **high demand**.

General comments

Performance in the examination varied depending on both preparation and examination technique.

- **Well-prepared candidates who applied good examination technique** were able to achieve high marks.
- **Well-prepared candidates with weaker technique** (e.g., giving answers that did not address the specific question) tended to score lower marks.
- **Unprepared candidates** often showed limited knowledge of the Assessment Outcomes and weak examination technique, resulting in lower marks.

A key factor in examination success is a clear understanding of the **command words.** Candidates and centres are strongly advised to fully familiarise themselves with these terms, as they indicate the type and depth of response required.

For example:

- *State*: provide a brief descriptive point.
- *Explain*: give a clear, short, reasoned statement, often outlining a process or factor.
- *Justify*: support an answer with evidence.

The full table of command words for RHS Level 2 qualifications is provided below.

Command word	Definition
Annotate	Learners should be able to apply labels and supporting information on diagrams
Assess	Learners are required to give a statement relating to the overall quality of the issue being considered. This could include an argument about an issue (for and against). The statement should provide evidence, with appropriate use of examples, and express an opinion about the merits of each side considered
Calculate	Learners should be able to carry out basic calculations, or estimate quantities of materials
Choose	Learners should be able to select from a range of alternatives

Command word	Definition
Compare	Provide a response that identifies similarities between things
Compare and contrast	Provide a response that both identifies similarities and identifies and evaluates differences between things
Complete	Learners should be able to provide short responses, or complete statements and tables
Deduce	Come to a decision based on information provided in the question
Define	Learners should be able to state formal definitions
Describe	Learners should be able to recall facts or applied processes in an accurate way
Discuss	Identify key points, explore all aspects, provide a conclusion
Evaluate	Learners should be able to use information supplied, as well as their own knowledge and understanding, to consider evidence for and against when making basic decisions
Estimate	Roughly calculate or judge the value, number, quantity, or extent of
Explain	Learners should be able to make clear, short, reasoned statement to explain a process or similar factor
Explain how and why	Learners should be able to make clear, short, reasoned statement to explain a process or similar factor The 'how' asks about the procedure or process The 'why' asks about the purpose of something
Give (a reason)	Learners should be able to clearly state reasons (facts) as directed
Identify	Name or characterise, for example the identification of type of plant tissue, or floral part of a plant
Justify	Learners should be able to provide evidence to support an answer
Label	Apply information to diagrams
List	Learners provide single word, or short phrase answers
Name	Learners should be able to provide a single word or short phrase answer
Outline	Learners should be able to provide short descriptions, for example the stages that make up a task
Predict	State what you think will happen, based on a given scenario and your own knowledge
Show that	Prove the statement in the question is correct
State	Learners should be able to provide brief descriptive points
State and explain	Make a point, and then explain or justify key aspects
Suggest	Learners should be able to apply their knowledge and understanding to make recommendations for actions
Summarise	Learners should be able to provide a brief account of the main points with regards to a topic, focussing their response on the most essential ideas.
Use	Learners should be able to use information provided within the question, sometimes in conjunction with their own knowledge, to carry out a task
Write	Learners should be able to provide a short answer as directed

Centres have requested guidance with regards to the following terminology used within questions, and so clarification is provided below:

Term	Explanation
Horticultural situation	Candidates may be required to state a horticultural situation, for example the planting of whips, the pruning of fruit trees*. This allows the candidate to focus their response to the situation and allows the examiner to calibrate their thinking.
Horticultural setting	Candidates may be required to state a horticultural setting, this would include garden areas, for example a productive garden, or an herbaceous border. This allows the candidate to focus their response to the setting and allows the examiner to calibrate their thinking.
Growing system	Candidates may be required to state different growing systems to add context to their responses. Growing systems can be traditional, raised beds, container growing, organic, biodynamic as appropriate.

*This example relates to edible landscapes.

Qualification Specification and Guidance Document

The ***Qualification Specification*** sets out the curriculum content on which candidates will be examined.

To support delivery, the 2025 ***Theory Centre Guidance Document*** (Version 5 of which is available – for Centres only) provides centres with additional clarification on how to interpret the Assessment Outcomes at the breadth and depth appropriate for a Level 2 qualification.

It is important to note that the Guidance Document is ***not*** a comprehensive teaching manual. Instead, it highlights examples of key areas within each Assessment Outcome.

For example, if an Assessment Outcome in the Specification lists five areas, the Guidance Document may only expand on one area as an illustration. Centres should utilise this document when teaching to ensure their learners are suitably prepared throughout the course and ahead of all assessments.

Section A

Questions 1 – 20

General comments on Section A

Multiple Choice Questions (MCQs) are designed to assess 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, along with the application of good examination technique.

Candidates and centres are reminded of good examination technique with regards to MCQs Candidates should:

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

In this examination many candidates failed to answer Question 11, on water uptake correctly.

Which statement correctly describes a process involved in the uptake of water and/or minerals by the root.

a) minerals dissolved in water are taken into the root hair cells by osmosis
b) the Casparian strip prevents water moving between the cells of the endodermis
c) phloem sieve tubes, which transport water through the root, have lignified cell walls
d) root hairs which take up soil water are extensions of cells in the root cortex

Using this question as an exemplar:

Which statement correctly describes a process involved in the uptake of water and/or minerals by the root.

Is incorrect, as minerals do not enter cells by osmosis

~~*a) minerals dissolved in water are taken into the root hair cells by osmosis*~~
b) the Casparian strip prevents water moving between the cells of the endodermis
c) phloem sieve tubes, which transport water through the root, have lignified cell walls
d) root hairs which take up soil water are extensions of cells in the root cortex

Which statement correctly describes a process involved in the uptake of water and/or minerals by the root.

~~*a) minerals dissolved in water are taken into the root hair cells by osmosis*~~
b) the Casparian strip prevents water moving between the cells of the endodermis
c) phloem sieve tubes, which transport water through the root, have lignified cell walls
~~*d) root hairs which take up soil water are extensions of cells in the root cortex*~~

Is incorrect, as root hairs are not extensions of cells in the root cortex.

Which statement correctly describes a process involved in the uptake of water and/or minerals by the root.

~~*a) minerals dissolved in water are taken into the root hair cells by osmosis*~~
b) the Casparian strip prevents water moving between the cells of the endodermis
~~*c) phloem sieve tubes, which transport water through the root, have lignified cell walls*~~
~~*d) root hairs which take up soil water are extensions of cells in the root cortex*~~

Is incorrect, as phloem does not have lignified cell walls, and because it carries water, sugar and other products around the plant.

Which statement correctly describes a process involved in the uptake of water and/or minerals by the root.

~~*a) minerals dissolved in water are taken into the root hair cells by osmosis*~~
b) the Casparian strip prevents water moving between the cells of the endodermis
~~*c) phloem sieve tubes, which transport water through the root, have lignified cell walls*~~
~~*d) root hairs which take up soil water are extensions of cells in the root cortex*~~

Is the correct response, as the Casparian strip does prevent water moving between the cells of the endodermis.

Section B

Each question is considered separately.

Question 1

This question assessed candidates' knowledge and understanding of **Plant Breeder's Rights (PBRs)**.

a) Definition of PBRs.

- Stronger responses correctly identified PBRs as *intellectual property rights for plant breeders*, often comparing them to patents. These responses were awarded full marks.

- Weaker responses mentioned royalties without explanation, made vague statements about new plants being bred, or ignored the command word *define* by instead discussing the benefits of PBRs.

b) Benefits of PBRs to the breeder.

- Stronger responses identified benefits such as:
  - entitlement to royalty payments
  - protection from unauthorised propagation
  - commercial control over plant production.

- Weaker responses often mentioned royalties but failed to state a second valid benefit. Some gave incorrect or irrelevant points, e.g., higher sales prices, reduced pest risks, or lower carbon footprint from UK production.

c) Benefits of PBRs to the horticultural industry.

- Stronger responses highlighted how PBRs:
  - encourage the breeding of new cultivars by protecting investment
  - support funding for research into desirable traits (e.g., disease resistance, higher yields).
- Weaker responses confused PBRs with the role of the International Cultivar Registration Authority (ICRA), incorrectly claiming PBRs ensure cultivars are distinct, stable, uniform, or correctly named.

d) Consequences of non-compliance with PBRs.

- The majority of candidates correctly stated that fines can result from non-compliance.
- Weaker responses were vague (e.g., "legal consequences") or incorrect, suggesting sales bans or illegality of breeding certain plants.

Closing comments

Overall, candidate performance showed that most had some awareness of Plant Breeder's Rights, though depth of understanding varied. Stronger responses demonstrated clarity in defining PBRs as intellectual property rights and were able to make accurate comparisons with patents. These candidates also recognised the dual benefits: financial protection for breeders and the wider encouragement of innovation within the horticultural industry.

Weaker responses tended to be vague, repetitive, or confused, particularly where candidates equated PBRs with cultivar registration or relied solely on royalties as their answer.

Misconceptions included linking PBRs to unrelated horticultural outcomes such as pest resistance or environmental benefits.

Future candidates would benefit from focused knowledge and understanding on the distinct legal and commercial functions of PBRs, including their difference from registration systems such as ICRAs. Clearer emphasis on the specific rights granted, and the potential consequences of non-compliance, will help ensure that definitions, benefits, and impacts can be explained with precision.

Question 2

This question assessed candidates' knowledge and understanding of **pollination**.

a) Advantage of cross-pollination.

- Stronger responses correctly identified that cross-pollination increases *genetic diversity*, which can lead to improved resistance to pests and pathogens.

- Weaker responses offered vague or incorrect points, such as "cross-pollination aids pollination and growth," "helps spread seeds," or "increases the likelihood of pollination by widening the field of counterparts."

b) Pollination tables.

Knowledge of pollination tables was weak overall, suggesting limited knowledge or awareness of this area of the Qualification Specification.

- Stronger responses stated that pollination tables categorise plants into *pollination groups*, explaining that groups consist of cultivars that flower at the same time.

- Weaker responses misunderstood pollination tables, suggesting they indicate:
  - distribution and abundance of pollinator species in a local area
  - charts of pollinator activity in orchards.

Knowledge of why pollination tables are used when planning an orchard was also weak overall, suggesting limited knowledge or awareness of this area of the Qualification Specification.

- Stronger responses stated that pollination tables can be used to ensure good fruit set, and yield by helping growers to choose compatible cultivars that flower at the same time and that can cross pollinate effectively.

- Weaker responses incorrectly stated that orchard trees are wind pollinated and therefore it is important to get the best flow of wind through the trees, or that they ensure the correct pollinator species are active during flowering.

Closing comments

Overall, performance on this question revealed that while many candidates were able to identify the basic advantage of cross-pollination, there was considerable weakness in understanding and applying knowledge of pollination tables. Stronger responses demonstrated awareness of the genetic benefits of cross-pollination and could explain how pollination tables are used in orchard planning to ensure effective fruit set.

However, a large proportion of candidates showed significant misconceptions, particularly in confusing pollination tables with records of pollinator species or environmental factors. This suggests that the role of pollination groups and their practical application in orchard management are not well understood across the cohort.

Future candidates would benefit from targeted knowledge on the function and importance of pollination tables in horticultural practice, with an emphasis on their role in cultivar compatibility, flowering time, and orchard productivity. Clearer reinforcement of the biological basis of cross-pollination and its practical implications would also help to reduce vague or incorrect answers.

Examiner note: Centres should ensure that candidates are fully familiar with the Qualification Specification requirements on pollination tables.

Question 3

This question assessed candidates' knowledge and understanding of osmosis.

a) Definition of osmosis.

Performance:
Most candidates achieved high marks on this part of the question.

- Stronger responses supplied the four correct missing words to complete the definition accurately.

- Weaker responses:
  - Confused *higher concentration* with *lower concentration*
  - Failed to identify the membrane as *semi-permeable*, instead writing "permeable" or "cell."

b) Environmental factors reducing osmosis around plant roots.

- Stronger responses correctly identified factors such as:
  - drought
  - soil compaction
  - flooding
  - salinity.

- Weaker responses gave incorrect or irrelevant factors, e.g.:
  - ground frost (not affecting the root zone)
  - high air temperature (not directly related to root conditions)
  - general references to drainage profiles or soil textures without clear links to osmosis.

Closing comments

Overall, candidate performance on this question was strong, particularly in supplying the correct terms for the definition of osmosis. Most candidates demonstrated secure knowledge of the movement of water across a semi-permeable membrane, although weaker responses often confused concentration gradients or failed to use the term 'semi-permeable.'

The section on environmental factors affecting osmosis produced a wider range of answers. Stronger responses were able to identify specific conditions such as drought, compaction, flooding, and salinity, and link these directly to reduced water uptake. Weaker answers tended to offer factors not directly relevant to the root zone, or gave vague references without explanation of their effect on osmosis.

Future candidates would benefit from reinforcing the precise terminology required in scientific definitions and from developing clearer links between environmental conditions and water movement at the root–soil interface.

Examiner note: Centres should ensure that candidates are confident in using correct scientific terminology for osmosis and in applying this understanding to practical horticultural contexts such as soil and root conditions.

Question 4

This question assessed candidates' knowledge and understanding of **green manures**.

a) Definition of green manure.

Stronger responses accurately stated that green manures are crops specifically grown to be ploughed, dug, chopped, and incorporated into the soil to improve fertility and soil structure.

Some candidates also explained that, under minimal cultivation, green manure crops may die back and then be incorporated into the soil naturally by soil organisms.

Weaker responses provided incorrect or irrelevant definitions, for example:

- a crop planted between harvested crops
- a natural fertiliser produced with organic materials
- weeds or other plants left to die back naturally
- material made in compost heaps from grass cuttings and garden waste
- animal manure produced from livestock fed on green plants.

A significant number of candidates described green manures simply as cover crops. This is not strictly correct. Cover crops are grown primarily to protect and improve the soil between periods of cultivation. They may prevent erosion, suppress weeds, retain nutrients, increase biodiversity, or provide habitat for beneficial insects, and they do not necessarily have to be incorporated into the soil. Examples include rye (*Secale cereale*), clover (*Trifolium* spp.), and phacelia (*Phacelia tanacetifolia*). Cover crops may be grazed, mulched, or incorporated, but this is not a requirement.

In summary, all green manures are cover crops, but not all cover crops are green manures. For example:

- rye left overwinter to stabilise soil and then cut down without incorporation functions only as a cover crop.
- vetch dug into the soil to release nitrogen is a true green manure.

Therefore, candidates who defined green manures simply as cover crops were not awarded marks unless they made clear that incorporation into the soil was the key process.

b) Benefits of green manures.

Stronger responses clearly identified the benefits of green manure crops, including:

- fixing nitrogen
- recycling soil nutrients
- suppressing weed growth
- protecting soils from erosion
- supporting pollinators when in flower.

Weaker responses tended to be vague or confused, for example:

- simply stating "improves soil structure" without development
- describing mulching to retain soil moisture
- outlining the benefits of composting rather than green manures.

c) One limitation of growing green manure crops.

Stronger responses recognised that:

- green manures can harbour and act as hosts for pests and diseases
- some species may set seed and become weeds themselves.

Weaker responses suggested that:

- green manures reduce productivity by taking space from cash crops
- failed to attempt this part of the question.

Closing comments

Overall, candidate performance showed a reasonable awareness of the purpose of green manures, though many confused them with cover crops. Stronger responses demonstrated clear understanding of the role of incorporation and linked this directly to soil improvement. Weaker answers often repeated misconceptions about composting or animal manures. Future candidates would benefit from greater emphasis on the distinctions between cover crops and green manures, alongside a stronger appreciation of the specific sustainability and horticultural functions of these crops.

Question 5

This question assessed candidates' knowledge and understanding of **weeds and other spontaneous plants**.

Name two perennial weeds that spread through rhizomes and require control in an ornamental garden.

Stronger responses correctly named suitable perennial weeds that spread through rhizomes, using accurate scientific names such as:

- *Calystegia sepium*
- *Elymus repens*

Weaker responses often:

- gave common names only
- named only one weed
- selected annual weeds, or those spreading by stolons rather than rhizomes (e.g. groundsel, hairy bittercress).

Describe how one of the above weeds should be managed (excluding the use of cultural control methods).

Stronger responses identified an appropriate physical, mechanical, or chemical control method and applied the command word *describe* to provide full and detailed responses.

Weaker responses either discussed cultural controls, which were excluded from the question, or gave only partial responses such as simply stating "herbicide" without further description.

Explain one advantage of using this method of control.

Stronger responses suggested specific advantages, for example:

- weed membranes block out light, preventing photosynthesis and killing the plant
- translocated herbicides ensure complete control by acting on all parts of the weed.

Weaker responses were vague, irrelevant, or incorrect, for example:

- citing general environmental benefits of not using herbicides
- discussing the wider value of weeds and spontaneous plants, rather than the advantage of the control method itself.

Explain one negative environmental impact of using this method of weed control.

Stronger responses gave specific, accurate impacts, for example:

- carbon release and disruption of soil ecology from manual removal
- run-off or spray drift associated with herbicide use.

Weaker responses often misinterpreted the question, focusing instead on the positive environmental value of weeds rather than the negative impacts of the chosen control method.

Closing comments

Overall, candidates demonstrated variable knowledge of perennial weeds and their control. Stronger responses were precise in plant naming and accurate in linking control methods to their advantages and disadvantages. Weaker answers often lacked scientific names, misapplied the command words, or diverted into irrelevant discussion of weeds' ecological roles.

Future candidates would benefit from practice in distinguishing between rhizomatous weeds and other forms of vegetative spread, and from developing clear, structured answers that address both the horticultural effectiveness and environmental implications of different control methods.

Examiner note: Centres should ensure that candidates are confident in applying plant naming skills using scientific names, and in accurately interpreting command words such as *describe* and *explain* when responding to applied horticultural scenarios.

Question 6

This question assessed candidates' knowledge and understanding of the ways that plant diseases can be introduced to a horticultural site.

Four ways that plant diseases can be introduced to a horticultural site.

Stronger responses were specific, technically correct, and clearly expressed.
Examples included:

- introduction of new plant material
- introduction of infested soil
- transfer of disease on footwear, tools, or clothing
- airborne spread from neighbouring plants
- introduction via sap-sucking insects
- weeds acting as alternative hosts.

Weaker responses were vague or incorrect. Common errors included:

- describing how pathogens spread *within* a site, rather than how they are introduced
- confusing plant diseases with plant pests.

Four preventative actions to reduce the introduction of plant diseases to a horticultural site.

Stronger responses demonstrated good knowledge of best practice, including:

- quarantining new plant material
- purchasing topsoil that meets British Standards
- cleaning and sterilising tools
- removing known weed hosts (e.g. Stellaria media, Capsella bursa-pastoris)
- controlling sap-sucking insects to reduce disease transmission.

Weaker responses were vague, incorrect, or unrelated, for example:

- describing pest control measures rather than disease prevention
- suggesting plant passports as a guarantee of being pest and pathogen-free
- restating methods of introduction rather than preventative actions.

Closing comments

Overall, candidates showed a general awareness of the risks associated with introducing plant diseases, but weaker answers often confused pests with pathogens or failed to distinguish between introduction and spread within a site. Stronger responses demonstrated a good understanding of both the routes of entry and the preventative measures aligned with professional Best Practice.

Future candidates would benefit from a clearer focus on the distinction between pests and pathogens, and from using precise examples of both introduction routes and preventative actions. Emphasis should also be placed on the importance of biosecurity protocols in horticultural practice.

Examiner note: Centres should ensure candidates are familiar with current industry biosecurity measures and Best Practice guidance, including quarantine and hygiene protocols.

Question 7

This question assessed candidates' knowledge and understanding of external plant structures.

In this question, candidates were required to give an example of an external plant structure and then name two plants with this botanical feature.

Leaf shape

Stronger responses correctly identified an appropriate leaf shape and provided two relevant plant examples using accurate scientific names.

Weaker responses often named a valid leaf shape but gave only common names or stated the genus, rather than the full scientific names.

Leaf arrangement

Stronger responses identified an appropriate leaf arrangement and supported this with two relevant plant examples named scientifically.

Weaker responses frequently demonstrated a lack of understanding of the term "leaf arrangement," ignored it, or left this part of the question unanswered.

Inflorescence structure

Stronger responses correctly identified an appropriate inflorescence structure and provided two relevant plant examples using accurate scientific names.

Weaker responses either demonstrated little understanding of the term, ignored it, or gave plant examples without clearly linking them to a specified inflorescence structure.

Closing comments

Overall, candidates showed variable knowledge of external plant structures. Stronger responses demonstrated both accurate plant science terminology and appropriate use of scientific names when giving examples. Weaker responses often relied on common names, lacked precision, or showed misunderstanding of key terms such as "leaf arrangement" or "inflorescence."

Future candidates would benefit from further practice in applying terminology related to plant science to plant identification, and from reinforcing the use of full scientific names in all examples. Emphasis should also be placed on understanding structural terms and linking these to correct plant examples.

Examiner note: Centres should ensure that candidates are confident in using scientific nomenclature and in applying plant science terminology precisely when describing plant structures and providing examples.

Section C

Candidate responses in Section C are graded against the **assessment ladder**, shown on the following page. Centres and candidates are advised to review this carefully, as it illustrates how assessment decisions are made when grading long-form responses.

To further support understanding of the assessment process, this report includes examples of candidate responses accompanied by examiner commentary explaining how decisions were reached.

Performance in Section C ranged from stronger candidates who:

- carefully read and addressed the key requirements of the question
- produced concise, logical, and well-structured responses
- demonstrated advanced and current understanding of the subject matter
- integrated knowledge from different topic areas to provide holistic answers
- fully met the requirements of the question without including irrelevant material or omitting essential points.

By contrast, weaker responses often:

- provided very short answers lacking the required depth and breadth
- focused narrowly on isolated words from the question rather than answering it as a whole
- produced basic or vague responses with limited technical content.

In addition to the assessment ladder, responses are reviewed against the following criteria:

Indicative content

- Strength of response
- Integration
- Horticultural knowledge

Strength of response

Stronger responses:

- developed a logical argument directly addressing the question
- drew upon reliable information sources
- remained consistently relevant
- expressed clarity of thought
- demonstrated sound knowledge of horticultural practices.

Integration

Candidate responses should integrate knowledge from across the syllabus, showing connections between topics to strengthen analysis and evaluation.

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 assessed candidates' knowledge and understanding of Integrated Pest Management.

The question required candidates to *discuss* the key principles of IPM before *evaluating* how these principles can be applied effectively in a garden setting.

According to the Guidance document, *discuss* is defined as: *Identify key points, explore all aspects, provide a conclusion. Evaluate* is defined as: *Learners should be able to use information supplied, as well as their own knowledge and understanding, to consider evidence for and against when making basic decisions.*

Performance overview

Stronger responses outlined the key principles of IPM in a logical sequence and paid attention to the evaluate command word, weighing positive and negative aspects in the context of a garden.

Key points included:

- An explanation of IPM as an environmentally sensitive approach that combines a range of practices to manage pests and pathogens in an economically viable, ecologically sustainable, and socially acceptable manner
- IPM was then discussed in detail
  - Scouting (identification of pests and pathogens)
  - Monitoring and assessment of pest and pathogen populations
  - Setting action thresholds
  - Prevention strategies
  - Integrated control methods, including:
    - Cultural
    - Mechanical/physical
    - Biological
    - Chemical (as a last resort).
- Evaluation of application in a garden setting, including:
  - the benefits of scouting and monitoring but also the challenge of using traps, with the implications this can have on non-target species
  - the practicality of setting action thresholds, particularly in small gardens where zones may be less distinct
  - the limitations of prevention strategies such as quarantine in domestic gardens, compared with more achievable measures such as sourcing plants from reliable suppliers
  - the accessibility of cultural and mechanical controls, compared with the reduced availability and practicality of using biological controls in smaller gardens
  - the ecological risks associated with chemical control, particularly in wildlife-friendly gardens where biodiversity could be negatively affected.

Stronger candidates concluded with a balanced summary, reiterating the strengths and limitations of IPM in garden contexts.

Weaker responses often:

- omitted key stages of IPM
- focused narrowly on methods to control specific named pests, rather than the broader principles of IPM
- confused IPM with Garden Health Plans, particularly with regard to abiotic factors
- failed to evaluate how IPM principles can be applied in a garden setting.

Closing comments

Overall, candidate performance showed that while most were aware of some IPM techniques, fewer demonstrated a full understanding of the structured principles that underpin this approach. Stronger answers not only described the stages of IPM but also evaluated their practical application in a garden, noting where strategies may be straightforward to adopt and where limitations exist. Weaker responses lacked breadth, misinterpreted the command words, or confused IPM with Garden Health Plans.

Future candidates would benefit from more structured knowledge and understanding on the step-by-step principles of IPM and from opportunities to practise evaluation skills by applying these principles to realistic garden scenarios.

Examiner note: Centres should ensure that candidates are confident in describing the stages of IPM, distinguishing them from wider plant health measures, and applying evaluation skills to balance ecological, practical, and horticultural considerations in garden settings.

Question 2

This question assessed candidates' knowledge and understanding of **sustainable gardening practices with specific reference to the planting of a new garden.**

Candidates were further instructed to focus their responses on light, shade and water management.

Performance overview

Stronger responses recognised the focus on sustainability and the requirement to work with, rather than against, the constraints of the site. These candidates addressed the specific instruction to consider light, shade, and water management, often structuring their answers under subheadings.

Stronger responses typically included:

- introductory statements emphasising the importance of designing with the site's conditions, rather than attempting to alter them extensively
- clear sections on light, shade, and water management, supported by examples
- recognition that natural patterns of sunlight and shade should guide plant selection and placement, rather than the reliance on interventions such as tree felling, crown lifting, pruning, or installing artificial structures
- the concept of maximising the potential of existing plantings to utilise shade
- the impact and the roles of microclimates in plant selection and placement
- the use of new plantings to create shade for other newly planted areas, for example the planting of new trees to provide shade for a fern garden
- water management principles, including:
  - "right plant, right place" to minimise irrigation needs once established
  - assessment of soil areas that hold more or less water
  - linking plant choice to soil characteristics
  - researching rainfall patterns
  - incorporating swales or rain gardens as sustainable design features.

Weaker responses often:

- ignored the question focus, discussing soil pH or soil amelioration
- suggested altering the site through crown lifting, thinning, or other structural interventions
- emphasised rainwater harvesting or general site appraisal without linking these to planting principles
- failed to address the core principles guiding the establishment of a new, sustainable garden.

Closing comments

Overall, candidate performance was mixed. Stronger responses clearly identified sustainable principles and structured their answers around light, shade, and water management, demonstrating an understanding of how site conditions guide planting design. Weaker responses often strayed into unrelated areas of soil management or site modification, missing the emphasis on sustainable principles that can guide the planting of a new garden.

Future candidates would benefit from reinforcing the principle of designing with the site, rather than attempting to change it, and from applying sustainable planting concepts such as maximising the use of microclimates, and applying 'right plant, right place' principles. Use of plant examples to illustrate suitability for sun, shade, or soil moisture conditions strengthened higher-level responses and should be encouraged.

Examiner note: Centres should ensure candidates are confident in applying sustainable planting principles, particularly in relation to light, shade, and water management, and in using plant examples to demonstrate how these principles are applied in practice.

Question 3

This question assessed candidates' knowledge and understanding of plant nutrition and photosynthesis.

Candidates were further instructed to explain how deficiencies in nutrient availability can be remedied using sustainable horticultural practices.

Performance overview

Stronger responses considered a range of key plant nutrients that have a central role in the photosynthetic reaction. These include:

- Nitrogen, involved in the formation of chlorophyll, and present within chlorophyll
- Magnesium, involved in the formation of chlorophyll, and present within chlorophyll
- Iron, involved in the formation of chlorophyll
- Sulphur, involved in the formation of chlorophyll
- Manganese, involved in the formation of chlorophyll.

Stronger responses linked the availability of these nutrients to the rate of photosynthesis. They clearly stated that a deficiency in nitrogen leads to a reduction in the quantity of chlorophyll within the leaf. As the chlorophyll molecule is where the photosynthetic reaction takes place, this in turn reduces the number of sites available for photosynthesis within the plant. The deficiency of nitrogen can be seen as chlorotic growth, or yellowing, due to the lack of chlorophyll.

Stronger responses also considered the role and impact of a deficiency in magnesium, iron, sulphur, and manganese. Many stronger responses discussed the law of limiting factors in relation to photosynthesis.

The remedy of deficiencies using sustainable horticultural practices was discussed to include the use of bulky organic matter, green manures, nutrient teas, and organic fertilisers, for example seaweed-based feeds.

Weaker responses often contained vague or incorrect assumptions relating to photosynthesis. These included failing to:

- identify the essential nutrients
- explain the roles of essential nutrients
- correctly explain the photosynthetic process
- consider the second part of the question relating to the remedy of nutrient deficiencies using sustainable horticultural practices.

Closing comments

Overall, this question effectively differentiated between candidates who had a secure knowledge of both plant nutrition and photosynthesis, and those with more superficial understanding. Stronger responses demonstrated the ability to integrate knowledge of nutrient function, the photosynthetic processes, and sustainable management practices. Weaker responses revealed gaps in subject knowledge, particularly in linking nutrient deficiencies to the rate of photosynthesis, and in applying sustainable remedies. Future candidates should be encouraged to develop a clear understanding of the mechanistic role of nutrients in photosynthesis and to connect this with applied, environmentally responsible approaches to nutrient management in horticulture.

Question 4

This question assessed candidates' knowledge and understanding of sustainability and plant health when related to the use of peat-free growing media.

Performance overview

Stronger responses considered the environmental impacts of using peat-free growing media, including:

- identifying the key bulk ingredients used in peat-free growing media as composted bark, composted forest brash or residue, and coir
- discussing the environmental impacts of coir, including high water usage in washing (particularly in countries with limited fresh water availability), environmental impacts of long-distance transport, and the use of single-use plastic sacks for distribution to gardens and garden centres
- considering the environmental impacts of composted bark and forest brash, such as carbon emissions from processing and transport, and the associated use of single-use plastic sacks.

Stronger responses also discussed plant health impacts of using peat-free growing media, including the impacts of:

- increased variability of the product in terms of stability, predictable performance, consistent air filled porosity (AFP), pH, and horticultural sterility
- evaluating the impacts of each of the above on plant health. For example, variability of AFP between different products was directly linked to root health and the increased likelihood of root rots in the root zone.

Weaker responses often:

- discussed the role of peat-based growing media rather than focusing on peat-free alternatives
- produced detailed but less relevant accounts of the environmental impact of peat extraction
- provided rudimentary and undeveloped arguments relating to the environmental impact of peat-free growing media
- failed to address the plant health impacts of peat-free growing media.

Closing comments

This question enabled stronger candidates to demonstrate both analysis and applied understanding of a current horticultural issue relevant to the Qualification Specification. Answer gaining higher marks balanced environmental considerations with a detailed discussion of plant health. Weaker responses often reverted to familiar, and irrelevant discussions on peat extraction, missing the opportunity to evaluate the specific challenges and benefits of peat-free alternatives.

Future candidates should be encouraged to develop a nuanced understanding of both a range of bulk ingredients used in the formulation of growing media, as well as the impacts these materials may have on plant health.