RHS

R3114

UNDERSTANDING A RANGE OF SPECIALIST ELEMENTS IN THE ESTABLISHMENT OF GARDEN & URBAN PLANTINGS

Level 3

Thursday 23 June 2022

15:35 – 16:40

Written Examination

Candidate Number: ....

Candidate Name: ....

Centre Number/Name: ....

IMPORTANT – Please read carefully before commencing:

i) The duration of this paper is **65** minutes;
ii) **ALL** questions should be attempted;
iii) **EACH** question carries **10 marks**;
iv) Write your answers legibly in the spaces provided. It is **NOT** necessary that all lined space is used in answering the questions;
v) Use **METRIC** measurements only;
vi) Use black or blue ink only. Pencil can be used for drawing purposes only. Ensure that all diagrams are labelled accurately with the line touching the named object;
vii) Where plant names are required, they should include genus, species and where appropriate, cultivar;
viii) Where a question requires a specific number of answers; only the first answers given that meet the question requirement will be accepted, regardless of the number of answers offered;
ix) Please note, when the word **'distinct'** is used within a question, it means that the items have different characteristics or features.

Please turn over/.....

ANSWER ALL QUESTIONS

MARKS

Q1 a) Describe **THREE** methods to manage the maintenance of plants in a bedding scheme to help ensure continuous flowering throughout a season.

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b) Select **TWO** suitable plants for a carpet bedding scheme giving a reason for **EACH** choice.

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Q2 a) A sensory garden is being planned for users with sensory impairments.

Identify **FOUR** potential hazards and their associated risks to these users by completing the table below:

Hazard	Associated risk
1.	
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4.	

b) Explain how **THREE** of the hazards identified in a) can be managed/mitigated for the health and safety of users of the sensory garden.

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Q3   State **FIVE** distinct benefits of urban street plantings giving a suitable **NAMED** plant example for **EACH**.

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Q4 a) State **FOUR** site requirements for establishment of a potager garden.

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b) Describe **THREE** site preparation tasks required before planting and installation of features for a new potager garden on virgin ground.

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Q5 a) Name **TWO** plant examples which are suitable for topiary.

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b) Describe the training and formative pruning of a young tree or shrub as a standard for topiary.

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c) Describe the maintenance of established topiary.

Q6 Describe **FIVE** distinct methods for reducing water use in container gardens.

Total Mark

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R3114

UNDERSTANDING A RANGE OF SPECIALIST ELEMENTS IN THE ESTABLISHMENT OF GARDEN & URBAN PLANTINGS

Level 3

Thursday 23 June 2022

Candidates Registered	**95**		**Total Candidates Passed**	74	93%
Candidates Entered	80	84%	Passed with Commendation	48	60%
Candidates Absent/Withdrawn	14	15%	Passed	26	33%
Candidates Deferred	1	1%	Failed	6	7%

General comments

Some candidates gave more answers than asked for in the question, which resulted in the excess not being marked.

Questions - It is essential to read the question carefully and to note the **key words** before starting to write to ensure answers are relevant. Candidates should take account of the command statements in the question e.g. 'list', 'describe', 'explain',   together with the mark allocation, to judge the depth of the answer required. Extra information, even if it is accurate, does not gain extra marks.

Where a number of answers were specified in the question and a candidate gave a list with more than that number, **only the first answers** in the list were marked, e.g. where the question stated 'Name **TWO** locations' or 'State **TWO** ways' only the first **TWO** answers were marked even if the correct answers were given further down. It is helpful (but not essential) if the answers are numbered in the text or separate paragraphs or bullet points are used.

Plant names - Where named plant examples were asked for, **full botanical names are required** to achieve full marks: genus, species and where appropriate variety, cultivar etc. needed to be written and spelt correctly. Where genus alone was given, all species in that genus need to show the characteristic asked for to gain any credit. **Common names were NOT accepted** and misspellings were penalised. Candidates needed to use unambiguous plant examples from sources such as the RHS Plant Finder and/or the RHS A-Z Encyclopaedia of Plants together with examples given in the syllabus and avoid obscure or difficult to verify plant examples, which risked being not credited.

Labels on diagrams must be carefully and correctly positioned to avoid ambiguity. Marks can be easily lost if this is not followed. Labels must actually touch the appropriate part of the diagram and must not be left hanging in mid air. Annotations on diagrams can be accepted as an alternative to description in the text as long as these are clear and answer the question. No marks were awarded for artistic merit or for unlabelled diagrams.

Continuation sheets - Where these have been included, it is vital that the relevant question number is included in the left hand margin if information written here is to be considered. These should also be attached to the answer booklet in the appropriate place and candidates should indicate in their answer booklet that they have written part of their answer on the attached sheet/s.

Q1. **a)** Describe **THREE** methods to manage the maintenance of plants in a bedding scheme to help ensure continuous flowering throughout a season.

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b) Select **TWO** suitable plants for a carpet bedding scheme giving a reason for **EACH** choice.

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Some candidates gave more answers than asked for in the question, which resulted in the excess not being marked.

Q1. **a)** Many candidates gave good answers with three clear methods and with good descriptive detail as to why this aided flowering including: Regular feeding, e.g., with high potassium fertiliser to encourage flowering with details of frequency and method of application. Other good answers included – regular dead heading or trimming to remove spent flowers, encourage new flower formation and reduce seed production, regular irrigation with details of irrigation system, such as seepage hose on a timer all with appropriate detail.

Marks were lost for incorrect examples which were not in context with the question such as roses needing pruning and perennials needing "Chelsea chop', neither of which would apply to a bedding scheme, or gave detail about spring bedding being followed with summer bedding which would cover more than one season - or gave weak/limited descriptive detail of methods and how these aided continuous flowering.

b) Most candidates gained high marks by selecting two suitable plants, giving full botanical names and gave good reasoning for their choices, by identifying each plant's specific characteristics which made it a suitable plant for carpet bedding such as type of foliage, compact habit etc. For example - *Echeveria elegans:* the reasons for its selection could include any of the following: succulent perennial therefore long lasting and drought tolerant, or clump/mat forming providing ideal tidy form for carpet bedding, or evergreen rosettes of whitish-green leaves providing a good foil or contrast for more colourful plants.

Sedum spathulifolium: credited reasons could include any of the following: Mat-forming, therefore form is ideal for close planting and coverage of ground, or evergreen perennial providing consistent foliage and longevity, or grows to 6cm so minimal trimming needed, or thick ovate, silvery-grey leaves tinged with purple therefore providing texture and colour contrast.

Many candidates did not answer this part of the question in the context of carpet bedding choosing a wide range of unsuitable plants. Marks were also lost for giving incomplete botanical names, such as genus only, incorrect species or the reason for selection was weak.

Q2. **a)** A sensory garden is being planned for users with sensory impairments.

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Identify **FOUR** potential hazards and their associated risks to these users by
completing the table below:

Hazard	Associated risk
1.	
2.	
3.	
4.	

b) Explain how **THREE** of the hazards identified in a) can be managed/mitigated for the health and safety of users of the sensory garden.

6

Q2 **a)** Most candidates scored highly with good range of hazards and risk identified in the context of a sensory garden including plants with spines/thorns causing risk of wounds and possible infection; contact hazard of plant hairs, irritant saps with risk of allergic reaction, rashes, blistering; uneven surfaces, changes in levels both with risk of slips, falls; water features such as ponds and fountains with risk of falling in, drowning and water borne infection.

A few candidates lost marks by confusing hazards and risks or gave very generalised answers not related to sensory gardens, or their four answers were too similar. Some chose obscure hazards such as gravel and windchimes.

b) Several very good answers were given for management and mitigation of selected hazards, such as planting spiny plants well away front the front of borders, selecting alternative plants and use of various barriers.
For water features, use barriers, or only have very shallow water, or install a grid just below the surface, clean out regularly to avoid water borne infections.

To mitigate the risk of falls on uneven surfaces install gentle ramps and/or handrails instead of steps and use anti-slip and textured surfaces.

Marks were lost for very brief or no clear explanation of points made, or out of context. Some candidates suggested some ideas which were hazardous in themselves such as locking gates to prevent visitors wandering off, and the suggestion of filling in a pond with gravel is unnecessary when the water feature is at the design/planning stage.

Q3. State **FIVE** distinct benefits of urban street plantings giving a suitable **NAMED** plant example for **EACH**.

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Q3. This question was generally answered well, with high marks awarded in several cases. Good answers included providing five distinct benefits and full botanical names for a suitable plant example. Good examples of benefits included:

- moderating temperatures by transpiration, cooling the surrounding air, any suitable plant example was credited
- Helping to reduce air pollution with example of *Platanus x acerifolia* absorbing air borne pollutants
- provision of shade with dense foliage trees such as *Sorbus aria*
- water management, interception of rainfall, slowing down of run-off by *Alnus glutinosa*
- increasing biodiversity with planting of flowering plants suitable for pollinators, such as *Lavandula angustifolia*
- improving well-being, reducing stress with tactile planting such as *Stipa tenuissima*,

Some candidates lost marks either by not giving suitable plant examples (e.g., invasive species) or incompletely named plant examples, or very limited and/or generalised benefits. Some candidates gave examples of verge planting with tall species which would affect the vision of road users and hence safety. There was also some repetition of answers, and some candidates gave more than five answers. Additional answers to the first five were not marked.

Q4. **a)** State **FOUR** site requirements for establishment of a potager garden.

4

b) Describe **THREE** site preparation tasks required before planting and installation of features for a new potager garden on virgin ground.

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Q4. **a)** Most candidates gained high marks by providing four clear key site requirements for a potager. Good answers included at least a sentence on requirements (some candidates gave some reasoning also) such as:

- sunny aspect with south facing orientation details,
- sheltered from winds by windbreaks or shelterbelt
- soil requirements such as fertile loam soil with good organic matter content, or other positive soil attribute
- accessible reliable water supply, such as mains water for an irrigation system, or large storage tanks for collected rainwater
- Good air drainage with a gentle slope and no frost pockets

Marks were not gained for one word or unclear statements or where points were too generalised.

b) Most candidates described key tasks for site preparation such as:

- removal of existing vegetation and clearance of pernicious weeds by various means, such as digging or use of herbicide
- details of primary soil preparation such as double digging and incorporation of organic matter OR establishment of a minimal cultivation system with layering of named materials on the soil surface
- tasks involved in the setting out and installation of paths or structures or irrigation all with good descriptions.

Candidates lost marks with lack of description of tasks such as just stating a task e.g., 'dig over' or if tasks were too generalised rather than specific to the context of the question.

Q5. **a)** Name **TWO** plant examples which are suitable for topiary.   **2**

b) Describe the training and formative pruning of a young tree or shrub as a standard for topiary.   **4**

c) Describe the maintenance of established topiary.   **4**

Q5. **a)** The majority of candidates gave two suitable plants with full botanical names including *Buxus sempervirens*, *Taxus baccata*, *Lonicera nitida*.

The few candidates not gaining good marks either did not provide full botanical names or stated Genus only, or an inappropriate choice.

b) Variable marks were gained by candidates for this part question. Good answers included descriptions such as what to look for in selecting a good specimen to train as a standard e.g., good strong upright stem/leader, providing support including tying in to a stake or cane, pruning off other lower shoots from the stem until the desired height is reached and use of frames/templates to achieve shape of the head, tying in, and how and when to formative prune.

Marks were lost by candidates being too general and not specific to the

context of the question. The question specified a standard and marks were also lost where answers did not consider this and also where there was a lack of any detail about actual formative pruning.

Some candidates gave detail about purchasing and/or planting not asked for in the question.

c) Most candidates scored well for this question with clear maintenance tasks described well. Good answers included detail such as frequency and times of year to trim often related to an example plant, i.e., once a year between May and September for *Buxus sempervirens* avoiding wet periods, twice a year for fast growing species such as *Lonicera nitida*. Also, using a frame or template to trim to shape and keep plants uniform where required, using clean, sharp well-maintained shears or trimmers. Other maintenance tasks credited included feeding annually with a top dressing of balanced general fertiliser in spring or after any hard pruning, specifying formulation and active ingredients; mulching in late spring with well-rotted organic matter to 50-100mm depth and irrigating regularly after pruning and trimming, clearing of debris and trimmings to prevent disease such as box blight, and monitoring for pests and diseases such as box tree caterpillar.

Marks were lost by vague answers not giving any descriptive detail.

Q6. Describe **FIVE** distinct methods for reducing water use in container gardens.　　　　　　　　　　　　　　　　　　　　　　　　　　**10**

Q6. The majority of candidates scored well for this question with good answers including descriptive detail and reasons why water use would be reduced including:

- self-watering pots with a wick leading into a bottom fed water reservoir, or a water filled cavity wall
- types of timed irrigation systems, watering technique, drip, seepage
- use of polymer gels or crystals in the growing medium to retain moisture
- grouping containers densely using large leafy plants to shade smaller plants underneath and reduce evapotranspiration
- water early in the morning or late evening to avoid evaporation from the growing medium in the hottest part of the day
- use glazed or non-porous pots, or use water proof liners inside pots
- use of drought tolerant plants such as named succulents,
- mulch the surface of the growing medium with ornamental material such as Leca to reduce evaporation

Marks were lost due to inappropriate methods, limited or no description/reasoning, and answers not in the context of the question such as collection and storage of water. Some candidates gave more than five answers so only the first five were marked.

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