



Candidate Number:

Candidate Name:

Centre Number/Name:

**RHS LEVEL 3 ADVANCED CERTIFICATE IN HORTICULTURE
WRITTEN EXAMINATION**

Wednesday 9 February 2005

IMPORTANT – Please read carefully before commencing.

- i) The duration of the papers in Module **E** is **2 hours**.
- ii) Answer **ALL** questions in Section **A**.
- iii) **ALL** questions in Section **A** carry equal marks.
- iv) Write your answers legibly in the spaces provided.
- v) Use **EITHER** metric **OR** imperial measurements but **NOT** both.
- vi) Where plant names are required they should include genus and species.

Module E

**Design of Ornamental Gardens
Plant Establishment and Maintenance
Ornamental Landscape Construction**

Section A – Short Answer Questions

Please turn over/.....

Answer All questions.

**Mark
s**

Q1 State the difference between theodolite and a dummy level.

2

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Q2 Define the term contour.

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Q3 Define **EACH** of the following terms:

- i) foresight;
- ii) backsight.

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Q4 List **FOUR** physical factors to be considered when selecting a site for a new garden.

2

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Please see over/.....

Answer All questions

Q5 Name **FOUR** different plants of different genera suitable as climbers for a north-facing wall. **2**

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Q6 Name **FOUR** evergreen herbaceous plants from different genera for use in a woodland garden. **2**

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Q7 List **FOUR** requirements of a garden hedge. **2**

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Please turn over.....

Answer All questions

Q8 State a suitable grass seed mixture for a low maintenance, fine textured ornamental lawn. **2**

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Q9 Explain the term soil tilth in relation to sowing seed for an annual border. **2**

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Q10 Explain the term invert level. **2**

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WRITTEN EXAMINATION**

Wednesday 9 February 2005

IMPORTANT – Please read carefully before commencing.

- i) The duration of the papers in Module **E** is **2 hours**.
- ii) Answer **ONE** question from **B, C** and **D** Sections.
- iii) **ALL** questions carry equal marks.
- iv) Write your answers legibly in the answer booklet provided.
- v) Use **EITHER** metric **OR** imperial measurements but **NOT** both.
- vi) Where plant names are required they should include genus and species.

Module E

**Design of Ornamental Gardens
Plant Establishment and Maintenance
Ornamental Landscape Construction**

Sections B, C & D

Structured Questions

Please turn over/.....

Section B – Design of Ornamental Gardens

Answer ONE question from this section.

	Mark s
Q1 Evaluate the use of colour in the design of a mixed border in the context of each of the following: i) colour harmony; ii) colour contrast; iii) creating a mood or theme; iv) creating balance and unity. Provide a NAMED EXAMPLE in each case.	20
Q2 a) Describe the difference between formal and informal garden styles.	8
b) Describe how a formal and informal garden can be created using with contemporary and traditional design features.	12

Please see over/.....

Section C – Plant Selection, Establishment & Maintenance

Answer ONE question from this section.

	Mark s
Q3 a) State FIVE features of winter interest provided by plants together with a NAMED example of EACH .	5
b) Describe the calendar of work required from planting and establishment to the end of the second winter.	15
Q4 a) Name FOUR different plant containers and FOUR different hanging baskets available for the outside of a municipal building.	4
b) For one of the hanging basket evaluated in (a) describe the process involved in producing a summer flower display.	10
c) Name THREE examples of plants suitable for summer interest hanging baskets, indicating the aesthetic qualities of each.	6

Please turn over/.....

Section D – Ornamental Landscape Construction

Answer ONE question from this section.

		Marks
Q5	a) Describe TWO distinct uses for EACH of the following items of machinery in the construction of ornamental landscapes:	
	i) an electric mixer;	4
	ii) a plate compactor (wacker plate);	4
	iii) one tonne mini digger.	4
	b) Complete a risk assessment for ONE item of machinery listed in (a).	8
Q6	a) Describe FOUR distinct vertical timber structures and explain the functions of EACH in a garden setting.	12
	b) Draw a labelled diagram to provide details of the construction of ONE of the structures described in (a).	5
	c) Describe THREE methods that may be used to preserve the life of timber structures.	3



RHS (LEVEL 3) ADVANCED CERTIFICATE IN HORTICULTURE

Wednesday 9th February 2005

MODULE E

Design of Ornamental Gardens Plant Establishment and Maintenance Ornamental Landscape Construction

Examiners Comments

Candidates Registered	164		Total Candidates Passed		
Candidates Entered	121	(73.8%)	Passed with Commendation	11	(9.1%)
Candidates Absent	33	(20.1%)	Passed	87	(71.9%)
Candidates Deferred	8	(4.9%)	Failed	23	(19%)
Candidates Withdrawn	2	(1.2%)			

Senior Examiners Comments.

In the scripts marked from the four modules (A, B, D & E) of the February 2005 Advanced Certificate in Horticulture examinations there were often too many generalisations. With many answers, there was a lack of clear factual information backed up by appropriate horticultural and technically correct examples. It is essential that candidates are briefed in the importance of providing factual information, appropriate and accurate examples to demonstrate their application and understanding of the questions.

Candidates should:

- ∞ Obtain instruction in basic examination techniques, i.e. **read questions carefully and answer the question as set**, allowing sufficient time for each part of the question and ensuring that all sections of a question are answered;
- ∞ Acquaint themselves with examination terminology and its meaning; for example the differences between state, describe, explain, evaluate, etc.

State - to write down the facts briefly

Describe - to give a descriptive account of

Explain - to make the meaning clear –it requires more information than a description, invariably based on an understanding of the underlying principles.

List - to itemise

Evaluate - to review the best points and problem areas

- ∞ Practise interpreting examination questions;
- ∞ Undertake mock examinations (time constrained) and seek constructive feedback
- ∞ Understand vocational terminology;
- ∞ Use large, clearly labelled diagrams where it is helpful to do so but do not waste time by giving annotated diagrams and then repeating the information in text form, the use of colour should only be used where it enhances the interpretation of the diagram.
- ∞ Give the full name to an item when it is first stated and avoid the use of quick lecture shorthand e.g. -ve for negative & +ve for positive.
- ∞ Demonstrate full understanding of a subject by relating answers to named examples and or principles, whether or not requested in the question.
- ∞ Present the answer in the order required by the question or clearly mark the answer with the appropriate question sections;
- ∞ **When naming plants use full botanical names, i.e. genus and specific epithet.**

Examination paper markers commented that it was difficult to mark some of the exam scripts because candidates failed to properly identify the question. There were many instances of poor handwriting and the way in which the answer was laid out exacerbated this problem. If an examiner cannot read the candidate's writing it is not possible to award marks. Candidates need to identify their answers by clearly writing the question and section numbers.

Section A. Short Answer Questions

It was reassuring to discover that there were few areas of the question paper that were less popular than others. Horticultural questions were well answered but candidates did not seem to enjoy the questions relating to surveying. Candidates are reminded once again that it is important to read the question carefully before starting to write down the answer.

Q1. State the difference between a theodolite and a dumpy level.

The Responses indicated that this was not a well-understood area. There are many similarities between the two instruments but where candidates were able to demonstrate their understanding of the differences, they were awarded good marks.

Q2. Define the term contour.

The question was popular and well answered by most. While a proportion of marks were awarded to candidates who described contours as the form of the land, full marks were given to those who described them more correctly.

Q3. Define **EACH** of the following terms:

- i) foresight;
- ii) backsight;

Candidates demonstrated varying degrees of difficulty in explaining the differences between 'foresight' **AND** 'backsight'. This is an area of the syllabus that needs more attention during the study period.

Q4. List **FOUR** physical factors to be considered when selecting a site for a new garden.

Candidates had little difficulty listing **FOUR** physical factors to be considered when selecting a site for a new garden. There was however occasional confusion over what were considered as physical factors.

Q5. Name **FOUR** different plants of different genera suitable as climbers for a north-facing wall.

This question was popular with many candidates and good marks were awarded on many occasions. However not all plants named were climbers and so did not always fit the criteria set.

Q6. Name **FOUR** evergreen herbaceous plants from different genera for use in a woodland garden.

The criteria here was an evergreen habit, herbaceous or at least non shrubby, and able to withstand shade. Many candidates answered this question well and showed good plantsmanship skills. Others did less well because they did not select appropriate plants.

Q7. List **FOUR** requirements of a garden hedge.

This question was popular and asked candidates to list **FOUR** requirements of a garden hedge. There was a wide list of requirements presented by candidates and in most cases full marks were awarded.

Q8. State a suitable grass seed mixture for a low maintenance, fine textured ornamental lawn.

Any appropriate mix of fine grasses was acceptable. It should be noted the Ryegrass, *Lolium perenne* in its normal type form is not a low maintenance species. Where it was included marks were lost.

Q9. Explain the term soil tilth in relation to sowing seed for an annual border.

The concept was well understood and explained, full marks were often awarded.

Q10. Explain the term *invert level*.

This was not a popular question but where it was attempted many candidates were able to demonstrate their understanding of the term.

Section B. Structured Questions (Design of Ornamental Gardens)

Q1. a) Evaluate the use of colour in the design of a mixed border in the context of **EACH** of the following:

- i) colour harmony;
- ii) colour contrast;
- iii) creating a mood or theme;
- iv) creating balance and unity.

Provide a **NAMED** example in **EACH** case.

- i) Candidates who gained most marks mentioned the use of colours adjacent on the colour wheel. Cool colours tend to harmonize. Less contrast between light and dark colours, e.g. greys, pale blue, and pale mauve. Colours used of the same hue.
- ii) A combination of colours opposite on the colour wheel, e.g. blue and orange. Warm and cool colours tend to contrast. Triadic colour arrangements also tend to provide contrast. Very few candidates mentioned light and dark contrasts.
- iii) Marks were given for the effects of colour, i.e. yellow being sunny, spring-like, bright reds vibrant, dark reds give a feeling of comfort or well being, dark blue dependability. Warm colours are vibrant, where as cool colours tend to be restful.
- iv) Polychromatic arrangements, many colours tend to disunity, they look 'busy'. Monochromatic colour tend to lack contrast. High gain colours, e.g. yellow (in fact, most warm colours) can be used in smaller quantities. Positioning of warm colours will draw the eye and can imply either symmetry and asymmetry. Warm colours advance and cooler colours tend to recede. Linking colour themes by the use of flower, stem or foliage.

Q2. a) *Describe the difference between formal and informal garden styles.*

b) *Describe how a formal and informal garden can be created using contemporary and traditional design features.*

a) Marks were awarded for the following:

Formal landscape are symmetrical, divided into either halves or quarters. Even numbers and individual items such as statues and plants to provide symmetry.

Even balance plants i.e. pillars, columns and spheres used. Straight lines are used together with squares, rectangles & circles.

Formal layouts tend to be asymmetrical, informal layouts are curvy linear and the use of asymmetric composition based on thirds. Plants are of more irregular shape and are used in odd numbers one, three and five. A more formal effect is the fuse of rectilinear, arc and tangent layouts, which can asymmetrical but employ straight lines.

b) Formal – traditional involves the use of classical structure and ornaments such as balustrades and urns. Use of patterns and topiary set with geometric blocks and planting which involve the use of formal seasonal bedding. High quality paving or gravel paths, grass used in the form of tapis verts. Ponds formal centred with classical fountain.

Examples include Versailles, Bicton, Devon, Italian Garden and Tatton Park

Formal contemporary: use of varied textured and colour hard surfacing.

Minimalist planting using blocks of striking texture of colour. Use contemporary ornaments, including glass and stainless steel. Clean rectangular pools e.g. Kiftsgate Court

Informal – Traditional

Curvi-linear style using curved lawns and borders, soft billowing planting using shrubs and herbaceous plants. Softer lines, using rustic furniture, traditional seats.

Informal – Contemporary

Curvi-linear style defined with use of hard features, use of abstract statues and furniture can be either natural colour or strong colours. Planting can be in block or drifts using strong contrasts. Prairie style planting.

Section C. Structured Questions (Plant Selection, Establishment & Maintenance).

- Q3. a) State **FIVE** features of winter interest provided by plants together with a **NAMED** example of **EACH**.
- b) Describe the calendar of work required from planting and establishment to the end of the second winter.

a) The majority of candidates were able to identify five features of winter interest together with a named example.

b) Some candidates took the meaning of the question to look at planting and establishment of the five examples given in section a). Others took a more general view and answered the question as if an area was to be planted up for winter interest and then looked at the planting and establishment over a two-year period.

Candidates were marked equally, despite this anomaly in perception of the question.

Candidates lost marks if they did not follow the question by describing a 'calendar of work'.

- Q4. a) Name **FOUR** different plant containers and **FOUR** different hanging baskets available for the outside of a municipal building.
- b) For one of the hanging baskets evaluated in a) describe the process involved in producing a summer flower display.
- c) Name **THREE** examples of plants suitable for summer interest hanging baskets, indicating the aesthetic qualities of each.

a) The majority of candidates struggled to find four examples of container and four of hanging baskets. The question states they needed to be suitable for outside of a municipal building – this may have confused candidates.

b) Candidates on the whole answered this section satisfactorily – marks were lost however because of the following:

- ∞ Poorly drawn and labelled diagrams
- ∞ Lack of clear definition of the process involved.

Candidates who describe the process in steps gained the highest marks.

c) Most candidates were able to give three examples of plants suitable for summer interest and describe the aesthetic qualities of each.

Section D. Structured Questions (Ornamental Landscape Construction).

- Q5. a) Describe **TWO** distinct uses for **EACH** of the following items of machinery in the construction of ornamental landscapes:
- i) an electric mixer;
 - ii) a plate compactor (wacker plate);
 - iii) one tonne mini-digger.
- b) Complete a risk assessment for **ONE** item of machinery listed in a)

Almost all the candidates were able to correctly identify two uses of an electric mixer as mixing concrete and mixing mortar, This alone was not adequate and to gain full marks they also needed to describe the uses of the mixed concrete and mortar in a landscape situation. Most used the examples of concrete in the foundations of a wall or as a garden path and mortar as the bonding agent between bricks or block in a wall. In some cases there was confusion as to the difference between cement, mortar and concrete and when ratios were quoted these were often specified incorrectly. Other acceptable alternatives uses included mixing of potting composts and the tumbling of aggregates to round off the edges for use as decorative mulches. In many cases there was difficulty in stating two uses for a plate compactor. Most could describe the compaction of subsoil or base materials prior to constructing paving but fewer candidates were able to describe the other most common use of compacting block paving. Some candidates wrongly gave the compaction of topsoil prior to laying turf or the levelling of the turf itself as the answer.

The use of a mini-digger was mostly understood by all candidates with the most common answers being for excavating ponds, digging foundations or minor grading work. A few candidates suggested moving soil around a site, which would not really be practical except on a very small scale. There was little mention of why a mini-digger may have been more appropriate than a full size excavator.

Very few candidates were able to complete a satisfactory risk assessment. There was little understanding of the difference between **HAZARD** and a **RISK**. Few candidates explored who would be at risk or stated the requirement to assess the level of risk, and only one or two suggested a points system as recommended by the Health and Safety Executive (HSE).

There was little evidence of working knowledge of the machines and especially the power sources involved; although most candidates stated that an RCD should be employed with electrical equipment, the requirement to use 110 Volt transformers was not mentioned at all and few candidates listed trailing leads as being a hazard. Some who chose the plate compactor suggested that this might have been electrically powered. None of those who chose the digger mentioned the dangers of hitting underground services.

Many candidates approached the question by listing the measures that should be put in place with an emphasis on Personal Protective Equipment (PPE). Again a working knowledge would have suggested that a hard hat, full-face mask, ear defenders and a respirator might be a little excessive for the operation of an electric mixer. Few candidates discussed legislation that is in place or the training required to operate machines and fewer still the need for regular review of the risk assessment process.

- Q6. a) Describe **FOUR** distinct vertical timber structures and explain the functions of **EACH** in a garden setting.
- b) Draw a labelled diagram to provide details of the construction of **ONE** of the structures described in a)
- c) Describe **THREE** methods that may be used to preserve the life of timber structures.

All candidates who answered this question were easily able to name four structures but many failed to gain full marks because either they were not distinctly different, or they didn't provide an adequate description as required in this question. For instance a fence would qualify as only one example and would need to be named and/or described in some detail. A fence may not even be made of timber, and to describe a function as privacy would not be appropriate to all kinds of fencing. Very few candidates gave comprehensive explanations of the functions of their structures. Most could for instance state that a fence may mark a boundary, form a division, create privacy or provide screening but omitted the security and safety aspects. The design and aesthetic functions were also often neglected

A common theme centred on the wind breaking characteristics but then inappropriate examples, such as post and rail fences or open trellis were quoted. Pergolas, arbours and gazebos were other popular structures chosen and it was often difficult to differentiate them as being distinctly different from each other, both structurally and functionally. Again candidates who chose these examples rarely gave a complete explanation of all the functions. Almost all answers included a function of supporting plants, which may not have been applicable in all cases. A clear labelled diagram should include a sketch, which, if not to scale, should at least be proportionately accurate, showing the overall structure, preferably in elevation and/or section view. This should include labels indicating all the materials involved, correctly specified with dimensions shown of both the individual components themselves and the overall finished structure. There should be a clear indication as to how the foundations would be constructed and how the various parts are fixed together. In very few cases were these requirements fulfilled. As well as the drawings being mostly to a very poor standard, in many cases higher marks would have been achieved if the material and dimensions had been labelled at all. There was very little evidence of a practical working knowledge of the structures chosen, with this being particularly evident in the methods of inserting posts into the ground and the construction of standard carpentry joints. Many candidates also included a step-by-step guide as to how the structure would be built which wasn't asked for.

Little description was included in timber preservation methods and just quoting '*tanalised*' timber required more explanation. Likewise "regular applications of preservative" was not adequate to gain full marks. Good answers also included using naturally durable timbers, such as oak or cedar, descriptions of physical barriers such as cappings, and various methods of keeping the timber out of contact with the ground. A worrying number of candidates advocated the use of creosote and spraying as a method of applying preservatives.
