



Candidate Number:

Candidate Name:

Centre Number/Name:

RHS (LEVEL 2) CERTIFICATE IN HORTICULTURE

Wednesday 22 February 2006

IMPORTANT - Please read carefully before commencing.

- i) The duration of the papers in Horticulture I is **1½ hours**.
- ii) **ALL** questions should be attempted in Section **A**.
- iii) **EACH** question carries **2 marks**.
- iv) Write your answers legibly on the lines provided.
- v) Use **EITHER** metric **OR** imperial measurements, but **NOT** both.
- vi) Where plant names are required they should include genus, species and where appropriate, cultivar.

HORTICULTURE I – Planning, Principles & Production

Section A – Short Answer Questions

Please turn over/.....

ALL questions should be attempted.

Marks

Q1 Describe **TWO** external characteristics for **EACH** of the following:

- i) monocotyledon leaf;
- ii) dicotyledon leaf.

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Q2 Define the following terms and give **ONE** example of **EACH** method, in relation to the control of annual weeds in a vegetable garden:

- i) chemical;
- ii) cultural.

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Q3 State **THREE** reasons for propagating a cultivated apple tree by means of budding on to a specific rootstock.

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Please see over/

ALL questions should be attempted

Q4 Define **EACH** of the following terms in relation to garden plants and give a **NAMED** example of **EACH**:

- i) herbaceous perennial;
- ii) half-hardy annual.

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Q5 Describe the following types of cutting and in **EACH** case give **ONE** example of a **NAMED** plant propagated by this method:

- i) leaf lamina;
- ii) leaf petiole.

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Q6 Define the surveying term 'triangulation'.

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Please turn over/.....

ALL questions should be attempted

- Q7** State **TWO** advantages and **TWO** limitations of providing shelter for a vegetable, or fruit garden. **2**

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- Q8** Describe **TWO** functions of root hairs in a healthy, functioning plant. **2**

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- Q9** Define **EACH** of the following terms in relation to raising vegetables from seed:

- i) thinning;
- ii) transplanting.

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Please see over/.....

ALL questions should be attempted

Q10 Define **EACH** of the following terms:

- i) wind pollination;
- ii) insect pollination.

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Q11 Describe **TWO** methods of staking fruit trees.

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Q12 State **FOUR** physical risk factors that should be assessed when planning a garden.

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Please turn over/.....

ALL questions should be attempted

Q13 Define the term 'intercropping' and give **ONE NAMED** example. **2**

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Q14 Define **EACH** of the following factors to be considered in planning a new garden:

- i) topographical;
- ii) environmental.

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Q15 State **TWO** methods of protecting fruit blossom from frost. **2**

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RHS (LEVEL 2) CERTIFICATE IN HORTICULTURE

Wednesday 22 February 2006

IMPORTANT - Please read carefully before commencing.

- i) The duration of the papers in Horticulture I is **1½ hours**.
- ii) Any **THREE** questions in Section **B** should be attempted.
- iii) **EACH** question carries **10 marks**.
- iv) Start **EACH** new question on a **separate** answer booklet.
- v) Use **EITHER** metric **OR** imperial measurements, but **NOT** both.
- vi) Where plant names are required, they should include genus, species and where appropriate, cultivar.

HORTICULTURE I – Planning, Principles & Production

Section B – Structured Questions

Please turn over/

Answer **THREE** questions from this section

		Marks
Q16	a) Explain FOUR advantages of botanical nomenclature.	4
	b) Describe the FIVE differences between angiosperms and gymnosperms AND give a NAMED example of EACH .	6
Q17	a) Describe the structure of a typical plant cell with the aid of a clearly labelled diagram.	6
	b) Explain the function of TWO of the cell components described in a).	4
Q18	a) Define EACH of the following types of propagation: i) seed; ii) vegetative.	2
	b) State THREE advantages and THREE limitations of seed propagation.	3
	c) Describe the vegetative propagation of a NAMED plant.	5
Q19	Describe the production of a NAMED brassica crop under EACH of the following headings: i) soil preparation, management and nutrition; ii) seed sowing and establishment; iii) pest and disease control; iv) harvesting.	2 4 2 2

Please see over /.....

Q20 Describe **FIVE** distinct factors which influence the choice of site for the successful growing of top fruit crops. **10**

Q21 Describe the following in relation to a formal garden style:

- | | | |
|------|---------------------------------|----------|
| i) | layout; | 2 |
| ii) | THREE typical features; | 4 |
| iii) | THREE types of planting. | 4 |



RHS LEVEL 2 CERTIFICATE IN HORTICULTURE

22nd February 2006

Horticulture I

Candidates Registered	= 1297	Pass with Commendation	= 439 (40%)
Candidates Entered	= 1103 (85%)	Pass	= 477 (43%)
Absent/Withdrawn/Deferred	= 194 (15%)	Fail	= 187 (17%)
Total Candidates Passed	= 916 (71%)		

Examiners Comments

General Overview by Senior Examiner

1. Candidates should be able to demonstrate a good range of plant knowledge and be able to give accurately-named plant examples where appropriate. Common names and generic names are often too vague and cannot be rewarded in the positive manner that genus, species and where appropriate, variety/cultivar can.
2. Candidates should be able to show good knowledge of the technical terms detailed in the syllabus, in the context of horticulture, and be aware that wider interpretation will not be rewarded.
3. The introductory rubric given on the first page of the question paper should be read carefully by candidates. Each year there is a significant number of candidates who ignore, or misread the instructions given and consequently may not perform as well as they could have done. This is particularly so where candidates answer either more questions, or more parts to a question, than are required.
4. Candidates should pace themselves during each paper. The most successful candidates allow sufficient time to read the question thoroughly before answering it and also take time to read through their answers.
5. Candidates need to interpret key words within questions, particularly those such as 'state', 'list' and 'describe'. Questions requiring descriptions, or explanations, obviously require a more detailed answer than those requiring a list.

6. In the Short Answer sections, it is important to ensure that responses are to the point and contained within the space allocated. Candidates should bear in mind that small sketches may be used to convey information more succinctly than words in some cases.
7. Successful candidates ensure that their answers to Structured Questions are focussed and to the point. It is disappointing when they cannot be rewarded for their efforts because the answer is irrelevant to the particular question. Candidates should take note of the mark allocation for specific sections and allocate their time and efforts accordingly.
8. Diagrams in Structured Questions can enhance an answer and where appropriate, can replace detailed descriptions. They should be large, clear and well-annotated. Colour may be used successfully but only where it is relevant to the answer.
9. It is important that candidates have the opportunity to practise both Short and Structured questions. Ideally, some practice should occur in time-constrained situations.
10. Candidates should be aware of the reading list of suggested books for the RHS Level 2 Certificate in Horticulture is available from the Qualifications Department.

Paper 1. Short Answer Questions

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*Q1. Describe **TWO** external characteristics for **EACH** of the following:*

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- i) *monocotyledon leaf;*
- ii) *dicotyledon leaf.*

Most answers appreciated the differences between monocotyledons and dicotyledons leaf characteristics, particularly in respect of shape and venation. A minority were imprecise, or confused.

*Q2. Define the following terms and give **ONE** example of **EACH** method in relation to the control of annual weeds in a vegetable garden:*

2

- i) *chemical;*
- ii) *cultural.*

Most candidates appreciated the difference between chemical and cultural weed control, although many provided examples inappropriate to the vegetable garden and/or to annual weeds.

- Q3. State **THREE** reasons for propagating a cultivated apple tree by means of budding on to a specific rootstock. 2

Some good answers were given but many were imprecise as to the reasons for propagation by budding. Bland statements such as 'improved yield', 'better crop flavour' or 'healthy growth' were not rewarded but rootstock influence on tree size and pest/disease resistance were.

- Q4. Define **EACH** of the following terms in relation to garden plants and give a **NAMED** example of **EACH**: 2

- i) herbaceous perennial;
- ii) half-hardy annual.

A majority of candidates answered this question well but too many failed to mention, or imply, that herbaceous perennials are non-woody plants. Also, there were a significant proportion of answers which failed to define adequately half-hardy annuals as frost sensitive plants raised under protection which are subsequently planted in the open. A number of inappropriate examples were given.

- Q5. Describe the following types of cutting and in **EACH** case give **ONE** example of a **NAMED** plant propagated by this method: 2

- i) leaf lamina;
- ii) leaf petiole.

Many candidates were able to describe leaf lamina cuttings and to provide an appropriate example. Leaf petiole cuttings were less well-covered.

- Q6. Define the surveying term: 'triangulation'. 2

Some good answers were given but many failed to appreciate the fundamental principle of surveying that triangles can be reconstructed from three independent measurements. Practical examples of the application of this principle were rewarded.

- Q7. State **TWO** advantages and **TWO** limitations of providing shelter for a vegetable, or fruit garden. 2

A well-answered question with only a minority of candidates being unable to state two advantages and two limitations of providing shelter.

Q8. Describe **TWO** functions of root hairs in a healthy, functioning plant. 2

Most candidates observed that root hairs function to absorb water and dissolve nutrients together with increasing effective volume of soil exploited by the plant. Anchorage, suggested by many candidates, is the function of roots, not root hairs.

Q9. Define **EACH** of the following terms in relation to raising vegetable from seed: 2

- i) *thinning;*
- ii) *transplanting.*

A generally well-answered question, although a lack of understanding of the practices involved in raising vegetable plants was shown in some scripts.

Q10. Define **EACH** of the following terms:

- i) *wind pollination;*
 - ii) *insect pollination.*
- 2

Many good answers were given but a minority failed to answer the question as set, confusing the mechanism of pollination with the method.

Q11. Describe **TWO** methods of staking fruit trees. 2

The best answers to this question included outline sketches of the methods described. Cordons and espaliers were cited often but methods of training described rather than support (staking).

Q12. State **FOUR** physical risk factors that should be assessed when planning a garden. 2

Most candidates successfully identified four risk factors. However, these were not rewarded if they were associated with construction methods rather than planning of the garden for safe use.

Q13. Define the term 'intercropping' and give **ONE NAMED** example. 2

The term 'intercropping' was generally well-understood with good examples cited. However, some responses failed to name two plants in their answer. Some scripts mentioned companion planting which represents a different concept.

*Q14. Define **EACH** of the following factors to be considered in planning a new garden:*

- i) topographical;*
- ii) environmental.*

2

Many answers showed a good understanding of topographical factors. However, there was some confusion about environmental considerations. In some scripts, the term was applied in a general sense rather than specifically to garden planning where issues such as aspect and micro-climate should be considered.

*Q15. State **TWO** methods of protecting fruit blossom from frost.*

2

Most candidates were able to suggest horticultural fleece as a method of frost protection. Others, such as sprinkling with water and planting next to a south-facing wall, were less well-appreciated.

Paper 2. Structured Questions.

**Mark
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*Q16. a) Explain **FOUR** advantages of botanical nomenclature.*

4

*b) Describe the **FIVE** differences between angiosperms and gymnosperms **AND** give a **NAMED** example of **EACH**.*

6

a) Many candidates attempting this question were able to give at least

four benefits of botanical nomenclature, although a significant proportion simply described the system without reward.

b) A few answers gave five differences between angiosperms and gymnosperms:

ANGIOSPERMS

Flowers
Seed enclosed in ovary
Many insect pollinated
Many diverse habitats
Evergreen or deciduous
All life-cycles
Non-resinous
Xylem vessels

GYMNOSPERMS

Cones
'naked seed'
Generally wind pollinated
Often xerophyte habitats
Mostly evergreen
Mostly perennial trees, or shrubs
Resinous
Xylem tracheids

Disappointingly few candidates were able to give a fully-named example of each.

Q17. a) *Describe the structure of a typical plant cell with the aid of a clearly-labelled diagram.*

b) *Explain the function of **TWO** of the cell components described in a).*

a) This was well-answered by a majority of candidates. Most were well able to identify the main structures within the plant cell and to draw a correctly labelled diagram. Some drawings were excellent but marks were lost for poorly drafted, excessively small and/or badly annotated examples.

b) Many candidates were well able to describe the function of two of the cell components. However, some answers showed a degree of confusion and/or a lack of detail expected in the answer to a structured question.

Q18. a) *Define **EACH** of the following types of propagation:*

- i) *seed;*
- ii) *vegetative.*

b) *State **THREE** advantages and **THREE** limitations of seed propagation.*

c) *Describe the vegetative propagation of a **NAMED** plant.*

a) Although most candidates were able to define vegetative propagation in the detail expected, many found it difficult to state concisely how young plants are produced from seed.

b) Some candidates were able to state three advantages and three limitations of propagation from seed. However, there were many vague and confused answers.

c) There were some excellent descriptions of the vegetative propagation of a named plant but many lacked the detail necessary for the award of full marks.

*Q19. Describe the production of a **NAMED** brassica crop under **EACH** of the following headings:*

- i) soil preparation, management and nutrition;*
- ii) seed sowing and establishment;*
- iii) pest and disease control;*
- iv) harvesting.*

This was generally well-answered. Candidates who provided the detail which makes the difference between an indifferent crop and a good one were suitably rewarded, as were those who structured their answers according to the question.

*Q20. Describe **FIVE** distinct factors which influence the choice of site for the successful growing of top fruit crops.*

Most candidates attempting this question were able to identify five factors to be considered when choosing a site for top fruit growing. However, few were able to give a coherent account as to why each was important, particularly in an orchard situation.

Q21. Describe the following in relation to a formal garden style:

- i) layout;*
- ii) **THREE** typical features;*
- iii) **THREE** types of planting.*

A well-answered question, although a proportion of candidates did not fully appreciate the meaning of ‘formal’ in this context.

- i) Many scripts showed an appreciation of the concepts of symmetry, central axes and focal points.*
- ii) Features included: box-lined beds, pleached hedges, yew hedges, geometrically-shaped features and fine turf.*
- iii) Types of planting included: standard roses, avenue of trees, Versailles tubs and formal seasonal bedding schemes.*
