



**RHS LEVEL 3 DIPLOMA IN HORTICULTURE
WRITTEN EXAMINATION**

Thursday 9 February 2012

10:00am – 12:00noon

MODULE F

**Horticultural Environment and Ecology
Resource Management in the Horticultural Enterprise**

Section A – Short Answer Questions

Candidate Number:.....

Candidate Name:.....

Centre Number/Name:.....

IMPORTANT – Please read carefully before commencing.

- i) The duration of the papers in Module **F** 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 **METRIC** measurements **ONLY**.
- vi) Where plant names are required, they should include genus, species and where appropriate cultivar.
- vii) Please note, sufficient lines space is provided. It is not necessary that all lined space is used in answering the questions.

Please turn over/.....

ANSWER ALL QUESTIONS

MARKS

Q1 List **FOUR** sources of finance for a small horticultural business. **2**

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Q2 State the role of **TWO** horticultural trade organisations. **2**

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Q3 State the importance of consulting meteorological records when selecting plants for a particular site. **2**

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Q4 State the process involved in pre-selection for interviewing a new member of staff. **2**

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Please see over/.....

Q5 State the full name of **EACH** of the following:

- i) CITES;
- ii) S.S.S.I.

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Q6 Explain, with examples, what is meant by the term 'abiotic factors'.

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Q7 Specify **TWO** sources of air pollution that may affect plant growth.

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Q8 State **TWO** benefits to the grower of holding Plant Breeders Rights.

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MARKS

Q9 Describe **TWO** methods of encouraging effective team work. **2**

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Q10 List **FOUR** barriers to communication within a horticultural organisation. **2**

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MODULE F

**Horticultural Environment and Ecology
Resource Management in the Horticultural Enterprise**

Sections B and C - Structured Questions

IMPORTANT – Please read carefully before commencing.

- i) The duration of the papers in Module **F** is **2 hours**.
- ii) Answer **ONE** question from Section **B** and **TWO** questions from Section **C**.
- iii) **ALL** questions carry equal marks.
- iv) Write your answers legibly in the answer booklets provided.
- v) Use **METRIC** measurements **ONLY**.
- vi) Where plant names are required, they should include genus, species and where appropriate cultivar.
- vii) Please note, sufficient lined space is provided in the answer booklet. It is not necessary that all lined space is used in answering the question.

Please turn over/.....

Section B – Horticultural Environment and Ecology

Answer ONE question only from this section

		MARKS
Q11	a) Describe ONE major source of grant aid available to the commercial horticulturist to aid in the process of conservation.	10
	b) Describe how the use of an Environmental Impact Assessment may contribute to the conservation process.	10
Q12	a) Describe the processes from bare ground to a climax plant community including the plant adaptations at EACH stage of the succession.	12
	b) Describe how plant succession affects the management of gardens.	8

Please see over/.....

Section C – Resource Management in the Horticultural Enterprise

Answer TWO questions from this section

		MARKS
Q13	a) State FOUR advantages of using ICT in the management of a NAMED sector of the UK horticulture industry.	8
	b) Describe an appropriate system for controlling EACH of the following:	
	i) security;	4
	ii) environmental control;	4
	iii) stock control.	4
Q14	a) Describe staff induction under EACH of the following headings:	
	i) content;	3
	ii) benefits.	3
	b) Describe the advantages of annual appraisals to inform EACH of the following:	
	i) staff induction;	7
	ii) staff development.	7
Q15	a) Explain how communication within an organisation is affected by EACH of the following:	
	i) structure of the organisation;	4
	ii) methods of communication.	4
	b) Analyse TWO alternative methods of improving the efficiency of communication within an organisation.	8
	c) Evaluate the role of communication in customer relations.	4
Q16	Evaluate the current plant health legislation under EACH of the following headings:	
	i) imports;	5
	ii) exports;	5
	iii) transportation within the UK;	5
	iv) pest and disease notification.	5

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Module F

Horticultural Environment & Ecology

Resource Management in the Horticultural Enterprise

Candidates Registered	13		Total Candidates Passed	8	72.73%
Candidates Entered	11	84.62%	Passed with Commendation	2	18.18%
Candidates Absent	1	7.69%	Passed	6	54.55%
Candidates Deferred	-	-	Failed	3	27.27%
Candidates Withdrawn	1	7.69%			

Section A – Short Answer Questions

Q1 List **FOUR** sources of finance for a small horticultural business.

Most candidates completed this question gaining full marks, they were able to give a range of answers from private and 'angel' financing to bank loans.

Q2 State the role of **TWO** horticultural trade organisations.

Candidates presented in their answers a range of trade organisations, ranging from the IoG and BALI to HTA, reflecting either their personal interest or organisations with which they were connected. Answers showed on the whole that they had a thorough knowledge of their roles in the Horticultural Industry.

Q3 State the importance of consulting meteorological records when selecting plants for a particular site.

Most candidates explained the importance of selecting suitable plants for particular locations, and relating specific examples to the local climate. Most concentrated on ornamental plants, few mentioned commercial cropping, for example selecting a site with a suitable climate to grow dessert apples, or grapes.

Q4 State the process involved in pre-selection for interviewing a new member of staff.

This question was not well-answered generally, many candidates went beyond what was asked for and some did not sequence the steps involved. Candidates were expected to state in their answers: prepare and publish an advertisement for the post which may be internal or external to the enterprise, provide an application form, paper-based or on-line, reading and sifting through job applications and applicants CVs, obtain references, select candidates, and send out invitations to attend for interview.

Q5 State the full name of **EACH** of the following:

- i) CITES;
- ii) S.S.S.I.

Most candidates were able to state that S. S.S.I stood for Sites of Special Scientific Interest. Some confusion arose with CITES, and candidates lost marks where they were not able to state in full that it stood for the '**Convention on International Trade in Endangered Species**' (specifically Wild Fauna and Flora).

Q6 Explain, with examples, what is meant by the term 'abiotic factors'.

Most candidates were able to explain that 'abiotic factors' related to the non-living factors that affected plant growth. Candidates qualified their answers with examples such as the climate and nutrition, gaining full marks.

Q7 Specify **TWO** sources of air pollution that may affect plant growth.

Candidates gave a range of answers including acid rain and pollution from the burning of hydrocarbon fuels, but few mentioned crop spraying with chemicals to control pests and diseases.

Q8 State **TWO** benefits to the grower of holding Plant Breeders Rights.

This question was reasonably well-answered; candidates were expected to state that growers were able to benefit from 'royalties' and retain complete control over the propagation material production or reproduction (multiplication). Additionally selling or other marketing, conditioning for the purpose of propagation, offering for sale, exporting/importing, stocking for any of the purposes mentioned above or any other act that may be prescribed by the provisions of the Plant Varieties Act 1997. Most candidates were able to specify two examples and gained full marks.

Q9 Describe **TWO** methods of encouraging effective team work.

Most candidates were able to describe two methods of encouraging effective team work including; team building exercises, reward and recognition, and knowing each member's role within an organisation.

Q10 List **FOUR** barriers to communication within a horticultural organisation.

Candidates were able to state a range of barriers to communication including: physical and psychological barriers, language and individual linguistic ability, background noise, physiological and attitudinal barriers etc. Candidates gained full marks where they gave four examples.

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Sections B & C – Structured Questions

Section B – Horticultural Environment & Ecology

- Q11**
- a) Describe **ONE** major source of grant aid available to the commercial horticulturist to aid in the process of conservation.
 - b) Describe how the use of an Environmental Impact Assessment may contribute to the conservation process.

In the first part of the question the examiners were looking for an account of **ONE** source of grant aid available to promote activities and management processes that encourage conservation. The name of the scheme, the source of funding and the activities that the scheme promotes should be clearly given and linked to the advantages to wildlife, the environment, the public, natural resources and heritage. An example would be the Environmental Stewardship Scheme (ESS).

A clear account of how the **Environmental Impact Assessment** contributes to the conservation process was required. Included in the answer should be: the aim and time-frame of the process; what is assessed; who carries it out and when; and how 'conservation' is actually promoted by this (examples could be given or even a case study).

Aspects assessed by the EIA are:

- effects on human populations,
- effects on populations of plants and animals,
- effects on the quality of the air and local water bodies,
- effects on the landscape and cultural heritage.

- Q12** a) Describe the processes from bare ground to a climax plant community including the plant adaptations at **EACH** stage of the succession.
- b) Describe how plant succession affects the management of gardens.

Examiners were looking for a clear statement as to what succession is and/or a clear statement on primary and secondary succession, depending on the overall process described by the individual. An account should be given of the processes involved. Each species is differentially adapted to the surrounding abiotic conditions, which collectively determine which species of plant are best suited to the environment at any particular time. Those 'best suited' (to named abiotic conditions) out-compete other species and form the 'dominant' individuals in the community (changing the seral stage). As the abiotic conditions change over time there is a shift in the competition advantage, so different species become better suited and gradually replace those previously dominating the community. Changes linked to soil formation, through decomposition of dead plant material, and those caused by animals burrowing and turning over soil etc., could be included. Typical seral stages should be described, such as (from bare ground/soil): grasses/annuals, herbaceous perennials, scrub/shrubs, trees (climax community).

Adaptations and advantageous features of the plants at each seral stage to changing conditions should be discussed, such as: colonisers (strategists) are opportunistic species and come in quickly to an area devoid of vegetation, while competitors (k strategists) are poor colonisers of 'new' land but good competitors. Named examples could be included where appropriate.

In answers to the second part of the question there should be a clear link between the process of succession and the management processes adopted by the individual to arrest or control these processes in garden situation to ensure that only the desired plants grow, i.e. unwanted competing plants (weeds) are eliminated, or lawned areas (a plagioclimax) is prevented from moving to the next seral stage. Processes could be described.

It was clear that most understood the problem of succession in the garden but few linked this to the management processes or just gave one short example. Candidates should avoid being diverted into describing a garden they had studied out of context with the question, in other words not linking it to succession.

Generally speaking candidates did well on this part of the question. There was an obvious understanding of the process of succession and what it entails. However, a few got drawn into describing a particular site they had studied without giving clear advantageous adaptations. It is important to focus on the question. Plant examples could be given to outline the stages of succession but it was necessary to state what the stages were, not leave the examiner to guess from the plant species named.

Candidates, who gave concise answers, clearly distinguishing each point by using a new sentence or a break in the paragraph, were at an advantage. Adherence to the question ensured that points were relevant and extraneous material was not included (which would gain no marks and just wastes time). There is no advantage in writing a long paragraphs about one single point. Equally bullet-pointing does not allow for good flow and linking of points. Candidates are also reminded to adhere to the instructions on the front of the examination paper and thus give the full scientific names of plant species used as examples in answers.

Section C – Resource Management in the Horticultural Enterprise

- Q13** a) State **FOUR** advantages of using ICT in the management of a **NAMED** sector of the UK horticulture industry.
- b) Describe an appropriate system for controlling **EACH** of the following:
- i) security;
 - ii) environmental control;
 - iii) stock control.

All of the candidates attempting this question named the sector of the industry their answer related to.

Candidates could however have gained additional marks by:

- stating advantages of using ICT rather than just describing the uses of ICT;
- naming the ICT systems being described shows a greater level of understanding than a more generic suppliers can be paid by computer;
- describing with technical detail how a system can be used, rather than relying on anecdotal comments, which do not indicate that the candidate has knowledge of the system to Level 3.

- Q14** a) Describe staff induction under **EACH** of the following headings:
- i) content;
 - ii) benefits.
- b) Describe the advantages of annual appraisals to inform **EACH** of the following:
- i) staff induction;
 - ii) staff development.

Many of the candidates who answered this question failed to achieve the maximum mark as they did not state the content or benefits of a staff induction at the appropriate level. Examiners were looking for an in-depth understanding of the subject showing evidence of reading and research.

Candidates who described the advantages of annual appraisals were rewarded with higher marks than those who simply described and defined what an annual appraisal is as the question had not asked for this information.

- Q15** a) Explain how communication within an organisation is affected by **EACH** of the following:
- i) structure of the organisation;
 - ii) methods of communication.
- b) Analyse **TWO** alternative methods of improving the efficiency of communication within an organisation.
- c) Evaluate the role of communication in customer relations.

Candidates who were able to demonstrate an academic knowledge of the theory and practice of communications within organisations gained the highest marks in this question, whilst those candidates who presented over-simplistic anecdotal information were let down by the lack of technical content in their answers.

- Q16** Evaluate the current plant health legislation under **EACH** of the following headings:
- i) imports;
 - ii) exports;
 - iii) transportation within the UK;
 - iv) pest and disease notification.

This question required candidates to evaluate current plant health legislation relating to import, export, transport and notification of pests and diseases.

The majority of the marks awarded were for the evaluation, therefore candidates who named a piece of legislation such as CITES or Plant Passporting, rather than evaluating the effectiveness of CITES or Plant Passporting could not be awarded full marks, underlying the importance of reading the question carefully and tailoring the answer to meet the requirements of the question.

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