



Candidate Number: .....

Candidate Name: .....

Centre Number/Name: .....

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

**Thursday 7<sup>th</sup> July 2005**

**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.

**Module F**

**Ecology and Environment  
Resource Management**

**Section A – Short Answer Questions**

**Please turn over/.....**

## ANSWER ALL QUESTIONS

### MARKS

Q1 Define the terms 'open' and 'closed' plant communities. **2**

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Q2 State **FOUR** basic requirements (excluding cost) that may influence a customer when sourcing plants. **2**

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Q3 Explain the difference between a regulation and a code of practice. **2**

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Q4 List **FOUR** written items that should be provided in a contract of employment. **2**

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Please see over/.....

## ANSWER ALL QUESTIONS

**Q5** Describe **FOUR** internal barriers to effective communication. **2**

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**Q6** State why any form of unfair discrimination is counterproductive to the success of a business. **2**

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**Q7** Name **FOUR** types of meteorological equipment used to record weather. **2**

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**Q8** Name **TWO** distinct zero-rated items and **TWO** exempt items for value added tax (VAT) within a horticultural business. **2**

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**ANSWER ALL QUESTIONS**

Q9 Define an ecosystem.

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Q10 Describe **TWO** distinct uses of Information Communication Technology (ICT) within a horticultural business.

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WRITTEN EXAMINATION**

**Thursday 7<sup>th</sup> July 2005**

**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.

**Module F**

**Ecology and Environment  
Resource Management**

**Sections B & C**

**Structured Questions**

Please turn over/.....

## Section B – Ecology and Environment

Answer **ONE** question only from this section

		<b>MARKS</b>
<b>Q1</b>	a) Differentiate between weather and climate with respect to the United Kingdom.	<b>2</b>
	b) List and describe the factors governing the climate of the United Kingdom.	<b>10</b>
	c) Explain how climatic, topographic and edaphic factors affect the choice of plants and crops grown in the United Kingdom with reference to <b>NAMED</b> examples.	<b>8</b>
<b>Q2</b>	a) Name <b>FOUR</b> aerial pollutants that may affect the growth and development of plants.	<b>4</b>
	b) For <b>EACH</b> of the pollutants named in a):	
	i) identify the possible sources of the pollutant;	<b>4</b>
	ii) describe its effects on the growth and development of plants.	<b>4</b>
	c) Explain the mechanisms by which some plants overcome heavy metal toxicity with the aid of <b>NAMED</b> examples.	<b>8</b>

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Please see over/.....

## Section C – Resource Management

Answer **TWO** questions from this section

		<b>MARKS</b>
<b>Q3</b>	a) List the main requirements of employment legislation on the selection and recruitment of staff.	<b>8</b>
	b) Describe <b>TWO</b> contrasting selection methods used to distinguish between candidates.	<b>6</b>
	c) Explain why it is important to have a structured induction process for new recruits.	<b>6</b>
<b>Q4</b>	a) List the main stages in the problem solving process.	<b>6</b>
	b) Explain the steps involved in a major capital investment decision with the aid of a <b>NAMED</b> example.	<b>10</b>
	c) Explain why a democratic management style may result in a better investment decision.	<b>4</b>
<b>Q5</b>	a) Describe the main tasks and responsibilities of a supervisor in a <b>NAMED</b> sector of horticulture.	<b>8</b>
	b) Explain the primary purpose of a staff appraisal scheme.	<b>6</b>
	c) Evaluate the limitations of an appraisal scheme linked to remuneration.	<b>6</b>
<b>Q6</b>	a) Define the term quality, with reference to <b>THREE NAMED</b> horticultural products.	<b>6</b>
	b) Describe the main actions that may be taken to deliver high quality products or services to customers using <b>NAMED</b> examples.	<b>8</b>
	c) State <b>THREE</b> methods, which by focusing on quality, can contribute to the success of a firm.	<b>6</b>



## RHS (LEVEL 3) DIPLOMA IN HORTICULTURE

Thursday 7<sup>th</sup> July 2005

### MODULE F

#### Ecology and Environment Resource Management

#### Examiners Comments

Candidates Registered	46		Total Candidates Passed		
Candidates Entered	40	86.96%	Passed with Commendation	12	30.00%
Candidates Absent	5	10.87%	Passed	22	55.00%
Candidates Deferred	0		Failed	6	15.00%
Candidates Withdrawn	1	2.17%			

#### Section A. Short Answer Questions

Q1. *Define the terms 'open' and 'closed' plant communities.*

This was not well-answered with many candidates referring to geographically isolated areas as indicative of closed plant communities. Other suggestions laid heavy emphasis on cross-pollination, inter-breeding and genetics. Better candidates correctly identified closed plant communities as those having reached their climax with no further opportunities for new plants to establish. A good example is mature oak woodland. Open plant communities such as open prairie have not reached their climax and there are opportunities for further invasion of plants by seed or other means to fill unoccupied areas of the environment. The relationship of a community of plants and their dominance of available resources was the key to this question rather than islands or physical boundaries.

Q2. *State **FOUR** basic requirements (excluding cost) that may influence a customer when sourcing plants.*

A well-answered question that sought to identify a range of qualities relevant to plants or plant nurseries/garden centres. Factors such as quantity and quality of stock, location, reputation, advice and guarantees were included in the best answers.



Q3. *Explain the difference between a regulation and a code of practice.*

Regulations were well understood to be an inherent part of statute law requiring adherence. Whilst most candidates realised that codes of practice don't carry the same authority, few explained that failure to operate according to an accepted code of practice means that the onus will be firmly on them to explain why they didn't, should an incident arise which involved legal action.

Q4. *List **FOUR** written items that should be provided in a contract of employment.*

Several candidates supplied more than four items and those in excess were not taken into account. The commonest errors were suggesting that a job description and also start and termination dates should be included. In fact, only a job title and a start date are needed in this instance (unless, of course, it is an unusual, fixed-term contract).

Q5. *Describe **FOUR** internal barriers to effective communication.*

Problems arose here when candidates failed to note the word "internal". Good answers included examples of attitude problems (in either the sender, or receiver), lack of knowledge or understanding and problems of impaired ability (hearing, seeing, etc.). Many examples relating to technology or organisational problems were therefore unacceptable.

Q6. *State why any form of unfair discrimination is counterproductive to the success of a business.*

Although the potential problems arising out of a culture of unfair discrimination were clearly understood by most candidates, there was a lack of understanding that the main problem was that of mismanagement of what is usually the most expensive resource in any business, namely labour. Anything which gets in the way of management utilising the most suitable person for the task (be it for reasons of race, gender, age, religious background, etc.) is wasting that expensive resource and this is therefore counterproductive to business success.

Q7. *Name **FOUR** types of meteorological equipment used to record weather.*

This was well-answered with a range of suitable instruments, mostly spelled correctly, being provided.

Q8. *Name **TWO** distinct zero-rated items and **TWO** exempt items for value added tax (VAT) within a horticultural business.*

This was generally poorly answered with a range of incorrect answers offered. Zero-rated items include fresh fruit and vegetables as well as their seeds and plants. Many food items in the supermarket are processed or preserved and therefore standard-rated, not zero. Exempt items include bank charges and interest payments/receipts, postage, insurance premiums and land purchase/rental.

Q9. *Define an ecosystem.*

Some very good and some very poor answers arose from this question but marks were usually lost through incomplete or ambiguous statements. The best answers included the terms biotic and abiotic, reference to ALL living organisms including micro-organisms, the environment (including soil, rocks, water, air) and the transfer of energy and materials. It is a natural and stable community.

Q10. *Describe **TWO** distinct uses of Information Communication Technology (ICT) within a horticultural business.*

Mostly well-answered with brief but good descriptions of the use of computers for word-processing and financial functions. Use of e-mails, the World Wide Web and modern cellphones were also acceptable answers when their horticultural uses were described.

## Section B. Structured Questions (Ecology and Environment)

- Q1. a) *Differentiate between weather and climate with respect to the United Kingdom.*  
b) *List and describe the factors governing the climate of the United Kingdom.*  
c) *Explain how climatic, topographic and edaphic factors affect the choice of plants and crops grown in the United Kingdom with reference to **NAMED** examples.*

To gain full marks for section a), weather and climate could have been more precisely defined in many cases. For example, 'weather' is the **state of the atmosphere at a given location and time**, not just 'day to day variations'.

Candidates who listed and described all the factors governing the climate of the UK, such as latitude, location relative to continents and oceans (Gulf stream), altitude, topography and our relationship to large scale atmospheric circulation patterns were fully rewarded.

Section c) brought forth a wide range of plants and crops grown around the UK. Candidates were not rewarded when named examples were omitted or no explanations were given as to **why** certain plants or crops were successfully grown in particular locations.

- Q2. a) *Name **FOUR** aerial pollutants that may affect the growth and development of plants.*  
b) *For **EACH** of the pollutants named in a):*  
    i) *identify the possible sources of the pollutant;*  
    ii) *describe its effects on the growth and development of plants.*  
c) *Explain the mechanisms by which some plants overcome heavy metal toxicity with the aid of **NAMED** examples.*

Many examples of aerial pollutants were provided *and* maximum marks were awarded for naming four of the following, Nitrogen Oxide Gases, Ozone, Sulphur Dioxide, PAN (Peroxyacetyl Nitrate) and HF (Hydrogen Fluoride). The often cited carbon dioxide is not generally thought of as an atmospheric pollutant (being essential for plant growth and development), unless in high concentrations.

Sources of pollutants were understood to come principally from the burning of fossil fuels (SO<sub>2</sub>), road transport, decay and volcanic activity (Nox) amongst others, but HF from high temperature industrial processes (e.g. glass, brick and tile-making) was less commonly cited.

Effects on plant growth and development tended to rely upon references to the 'greenhouse effect' rather than the more direct problems of, for example HF causing tip and margin burn, dwarfing and leaf abscission in plants.

The final section looked for mechanisms of overcoming heavy metal toxicity. Answers which included the terms 'exclusion', 'accumulation', 'excretion', 'localisation', immobilisation', and 'enzyme modification' were awarded best marks.

## Section C. Structured Questions (Resource Management).

- Q3. a) *List the main requirements of employment legislation on the selection and recruitment of staff.*
- b) *Describe **TWO** contrasting selection methods used to distinguish between candidates.*
- c) *Explain why it is important to have a structured induction process for new recruits.*

This three-part question on recruitment and selection was answered well by candidates. The first part required a listing of the main requirements of employment legislation in the recruitment and selection process. Weaker candidates did not identify all of the potential sources of discrimination or provided general comments not related directly to the question posed.

The second part required a description of two contrasting methods used to select candidates. Weaker responses failed to provide sufficiently distinct methods, good answers clearly described alternatives and their purposes and limitations.

The third part required an explanation of the importance of induction. Strong responses provided a range of examples of the benefits of a structured process, particularly in improving *health* and safety awareness.

- Q4. a) *List the main stages in the problem solving process.*
- b) *Explain the steps involved in a major capital investment decision with the aid of an **NAMED** example.*
- c) *Explain why a democratic management style may result in a better investment decision.*

This question on problem-solving and decision-making was in three parts and was generally well-answered. The first part required a listing of the main stages in the problem-solving process and most candidates provided good understanding of the specific stages.

The second part required an explanation of the steps involved in making a major capital investment decision. Strong candidates outlined a clear scenario and provided a detailed account of the decision-making process with the aid of a named example, whilst weaker answers did not identify a clear purpose, or define the benefits that may accrue.

The final part on democratic management style in making decisions was well-answered, correctly identifying the benefits of a team decision-making approach.

- Q5. a) *Describe the main tasks and responsibilities of a supervisor in a **NAMED** sector of horticulture.*  
b) *Explain the primary purpose of a staff appraisal scheme.*  
c) *Evaluate the limitations of an appraisal scheme linked to remuneration.*

This three-part question was on staff supervision and appraisal. In the first part strong answers were well-structured and applied management principles to a horticultural scenario. Weaker answers lacked structure and indicated insufficient understanding of principles.

The second part required an explanation of the primary purpose of a staff appraisal scheme. Weaker responses did not identify the main purpose of a scheme, or define how such a scheme would operate in practice.

The final part required an evaluation of the limitations of an appraisal system linked to pay. Strong responses identified the significant limitations in productivity and the potential demotivating factors, whilst weaker answers provided too little insight into the limitations.

- Q6. a) *Define the term quality, with reference to **THREE NAMED** horticultural products.*  
b) *Describe the main actions that may be taken to deliver high quality products or services to customers using **NAMED** examples.*  
c) *State **THREE** methods, which by focusing on quality, can contribute to the success of a firm.*

This three-part question on the principles and practice of quality management was the question that candidates had most difficulty with, many demonstrating insufficient understanding of the principles. The first part required a definition of quality with examples. Too few responses neither provided a comprehensive definition nor related adequately the ideas to customer needs and effects of price.

The second part required a description of the main actions needed to deliver high quality to customers. Good responses provided a strong theoretical basis emphasising the importance of a business approach to quality management, weaker responses lacked theory, or provided too few practical actions and often did not see quality in the overall context of the business.

The final part required an explanation of how a quality management approach can influence success. Strong answers provided practical illustrations of the positive impact of quality on customers and the business. Weaker candidates did not understand this part of the question, or provided general comments on actions to achieve success.

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