



Candidate Number:

Candidate Name:

Centre Number/Name:

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

Thursday 9th February 2006

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 State the affect of **TWO NAMED** pollutants likely to effect plant growth. **2**

.....
.....
.....
.....
.....

Q2 State the role of a National Plant Collection Holder. **2**

.....
.....
.....
.....
.....

Q3 State **TWO** ways by which energy is lost from the food chain. **2**

.....
.....
.....
.....
.....

Please see over/.....

ANSWER ALL QUESTIONS

Marks

Q4 State **TWO** factors which influence plant distribution.

2

.....
.....
.....
.....
.....

Q5 Differentiate between selling and marketing.

2

.....
.....
.....
.....
.....

Q6 Explain the legal implication for a customer when a plant is incorrectly priced in a retail outlet.

2

.....
.....
.....
.....

Q7 State, with reasons, whether an employer can charge an employee for the provision of personal protective equipment (PPE).

2

.....
.....
.....
.....

Please turn over/.....

ANSWER ALL QUESTIONS

Marks

Q8 State the essential elements of successful communication.

2

.....
.....
.....
.....
.....

Q9 Name **FOUR** sources of finance appropriate to small horticultural businesses.

2

.....
.....
.....
.....
.....

Q10 Differentiate between a trading, profit and loss account and a balance sheet.

2

.....
.....
.....
.....
.....



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

Thursday 9th February 2006

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

		Marks
Q1	a) Describe, with the aid of NAMED examples, plant modifications to withstand EACH of the following environmental conditions:	
	i) high salinity;	7
	ii) low rainfall.	7
	b) Evaluate THREE methods by which environmental conditions can be manipulated to improve plant growth and development under protected structures.	6
Q2	a) Describe, with the aid of a NAMED example, the factors involved in an EIA (Environmental Impact Assessment).	10
	b) Review the benefits and limitations of the EIA process.	10

Please see over/.....

Section C – Resource Management

Answer **TWO** questions from this section

		Marks
Q3	a) Describe the different sectors of UK horticulture.	10
	b) Explain how the sectors are distributed in the UK.	10
Q4	a) Explain organisational structure and design with reference to FOUR of the following terms:	
	i) organisational chart;	3
	ii) span of control;	3
	iii) division of labour;	3
	iv) delegating authority;	3
	v) levels of hierarchy.	3
b) Explain FOUR ways by which rigid organisational structure and job roles may affect the success of a firm.	8	
Q5	a) State SIX benefits of encouraging teamwork within the workplace.	6
	b) Explain the key actions a Manager should consider to build an effective team.	6
	c) Compare TWO leadership styles that could be used to optimise team effectiveness.	8
Q6	a) Describe TWO effective stock control systems that may be used to manage resources in a NAMED horticultural business.	12
	b) Evaluate the use of ICT (Information and Communication Technology) for stock control in a small horticultural business.	8



RHS (LEVEL 3) DIPLOMA IN HORTICULTURE WRITTEN EXAMINATION

Thursday 9th February 2006

Module F

Ecology and Environment Resource Management

Examiners Comments

Candidates Registered	51		Total Candidates Passed		
Candidates Entered	45	88.24%	Passed with Commendation	14	31.11%
Candidates Absent	3	5.88%	Passed	24	53.33%
Candidates Deferred	3	5.88%	Failed	7	15.56%
Candidates Withdrawn	0				

Section A - Short Answer Questions

Q1 State the effect of **TWO NAMED** pollutants likely to affect plant growth.

Well answered by most candidates, marks were awarded for correctly identifying pollutants such as sulphur dioxide, carbon dioxide, methane, ozone and heavy metals. The specific effects were sometimes weak and needed clear identification of how interference with plant processes or tissues occurs.

Q2 State the role of a National Plant Collection Holder.

There were too many vague and general answers given to this question. The role includes the collection and maintenance of as large a collection of taxa as it is possible to acquire. However, it doesn't stop there and collection holders also propagate, make available (for inspection and/or sale), record, and research plants in their collection, as well as they are able. Some candidates incorrectly thought that only British native plants were involved or that only plant species were collected. It should be recognised that many collections are in the hands of private individuals whose resources may be limited.

Q3 State **TWO** ways by which energy is lost from the food chain.

There was much confusion in the answers offered and marks were low. Energy is commonly transformed in the interaction between plants and animals in the food chain. However, losses only take place in the form of heat (mainly from animals), during digestion (always less than 100% efficient), respiration and (forest) fire. Death and decomposition merely re-cycle energy.

Q4 State **TWO** factors which influence plant distribution.

This was well answered. Better answers included clear statements about how much each factor influenced distribution whilst weaker responses stated very briefly two examples of the same factor such as climate, soil, competition, geographical barriers, man's activities etc.

Q5 Differentiate between selling and marketing.

Some good answers were submitted but all too often, marks were lost through limited understanding of the marketing function which must include market research as the principal driver towards the final production of goods or services. Failure to understand consumer needs (marketing) will ultimately lead to failure in the final exchange of money for goods (selling). Selling is also not limited to retailer activity.

Q6 Explain the legal implication for a customer when a plant is incorrectly priced in a retail outlet.

This question was very poorly answered. A marked price is essentially an "invitation to treat" and only when an offered price is accepted by the seller, does a contract exist. Thus a retailer can legally refuse any sale at the till. Note that retailers are free to charge what they want and stated recommended prices are mainly used by retailers to improve sales when their goods are marked at lower prices. Only where retailers ignored advertised prices would "misrepresentation" become an issue and the Trade Description Act may then become relevant. In practice of course, a retailer would normally honor the sale and immediately correct the marked price but it is important to know the correct legal position on sales and the question specifically asked about this point.

Q7 State, with reasons, whether an employer can charge an employee for the provision of personal protective equipment (PPE).

This was well answered by most candidates. Payment cannot be demanded for essential PPE necessary for work activity, (Personal Protective Equipment at Work Regulation 1992). Better answers drew attention to the fact that employees may have to provide their own PPE where a Risk Assessment failed to identify this as a necessity. Employers may charge for PPE when an employee leaves and fails to return the items to the employer provided that this procedure was part of the contract of employment.

- Q8** State the essential elements of successful communication.
Most candidates gave satisfactory answers to this question. The word “understanding” is crucial in explaining the essence of effective communications. The awareness of barriers and of interaction (feedback) between the sender and receiver(s) is vital. The right method and appropriate language is also important. The reality that the receiver’s understanding is the responsibility of the sender, is a challenge to us all.
- Q9** Name **FOUR** sources of finance appropriate to small horticultural businesses.

This presented no major problems to most candidates. Whilst banks (loans, overdraft), profits, owners capital, family and even credit card companies (short term only) were acceptable answers, hire purchase and lease hire are specific methods of acquiring fixed assets, and not finance.

- Q10** Differentiate between a trading, profit and loss account and a balance sheet.

This question produced extremely varied answers. The best candidates mentioned terms such as sales and purchases, stock, gross and net profit, depreciation and periods of time for a TP&L. For a BS, assets, liabilities, net worth and date should be included. It is clear that finance is a problem area for many candidates and there was considerable confusion in many answers.

Section B – Ecology and Environment

- Q1** a) Describe, with the aid of **NAMED** examples, plant modifications to withstand **EACH** of the following environmental conditions:
- i) high salinity;
 - ii) low rainfall.
- b) Evaluate **THREE** methods by which environmental conditions can be manipulated to improve plant growth and development under protected structures.

A range of appropriate modifications were described for each environmental condition, but some marks were lost when candidates described xerophytic modifications for both conditions. Some halophytes do display xerophytic modifications **but** it was the adaptations to dealing with salts that were required for full marks. Some of these modifications include salt glands and hairs and the accumulation of salts in cell vacuoles.

Methods to improve plant growth and development were often stated (e.g. Carbon dioxide enrichment, temperature control, day length control) but were not **evaluated** i.e. the benefits and limitations of each method were not mentioned, with candidates not being able to be rewarded as a result.

- Q2**
- a) Describe, with the aid of a **NAMED** example, the factors involved in an EIA (Environmental Impact Assessment).
 - b) Review the benefits and limitations of the EIA process.

a) Highest marks were awarded to candidates who, having named an appropriate example, could then describe the factors included in an EIA. Appropriate examples include large-scale development projects such as the proposed building of an industrial incinerator or nuclear reprocessing plant (Schedule 1 developments). Some Schedule 2 projects also warrant an EIA, but examples such as grubbing out a hedge, do not.

The main factors or 'impacts' examined should include socio-economic factors, noise, traffic issues, soil resources and geology, water resources, ecology, cultural heritage, air quality, climate, and landscape impacts.

EIA's are a process for identifying, evaluating and assessing the potential environmental effects associated with new development projects, so **all** factors impacting upon a new development need to be identified and assessed.

b) Benefits could have included: better project design, more effective consultation with interested parties and rational and defensible decision-making. Limitations could have included the uncertainty over impact predictions and faulty information or omitted impacts at the early stages, along with the time and cost constraints many candidates mentioned.

Section C – Resource Management

Candidates had prepared well for this module and there were few instances of poor examination technique. Strong candidates provided well-structured responses with relevant theory and detailed examples to support points made. Weaker candidates did not demonstrate sufficient understanding of principles or practice, some candidates did not plan their time carefully and consequently missed major parts of questions.

- Q3**
- a) Describe the different sectors of UK horticulture.
 - b) Explain how the sectors are distributed in the UK.

This two-part question was on the horticultural industry. The first part required a description of the different sectors of UK horticulture. Most candidates had difficulty structuring their responses, concentrating on their preferred sector and often failing to define all the key sectors before going on to provide more detailed description. The best answers provided a summary diagram of the interrelationships of the sectors. The second part required an explanation of how the sectors are distributed in the UK. Strong answers correctly identified the main factors influencing distribution before going on to describe specific examples.

- Q4**
- a) Explain organisational structure and design with reference to **FOUR** of the following terms:
 - i) organisational chart;
 - ii) span of control;
 - iii) division of labour;
 - iv) delegating authority;
 - v) levels of hierarchy.
 - b) Explain **FOUR** ways by which rigid organisational structure and job roles may affect the success of a firm.

This question on organizational structures was in two parts and was generally well answered. The first part required an explanation of some of the key concepts in organizational structure and design. Good responses produced contrasting structures and clearly explained principles supported by sound examples, weaker responses demonstrated insufficient understanding of theory. The second part required an explanation of how a rigid structure and job roles may affect the success of a firm. Good answers produced clear examples of how rigid structure may be both beneficial and detrimental to a firm.

- Q5**
- a) State **SIX** benefits of encouraging teamwork within the workplace.
 - b) Explain the key actions a Manager should consider to build an effective team.
 - c) Compare **TWO** leadership styles that could be used to optimise team effectiveness.

This three part question was on teamwork and leadership styles. The first part required statements of the benefits of team working. Strong answers gave a detailed account of how and why benefits accrued, weaker responses consisted of simple lists. The second part required an explanation of how a Manager could build an effective team. Strong responses provided a detailed account of a wide range of actions that could be taken and supported by relevant theory and examples. The final part required a comparison of leadership styles to optimise team effectiveness. Weaker answers lacked theory or failed to provide sufficiently distinct leadership styles for comparison. Good answers tabulated contrasting leadership styles describing the merits and limitations of each.

- Q6**
- a) Describe **TWO** effective stock control systems that may be used to manage resources in a **NAMED** horticultural business.
 - b) Evaluate the use of ICT (Information and Communication Technology) for stock control in a small horticultural business.

This two-part question on stock control was the question that candidates had most difficulty with, a significant proportion demonstrating insufficient understanding of the principles. The first part required a description of two effective stock control systems. Strong answers provided a detailed description of two contrasting stock control systems and an account of their effectiveness. Weaker answers lacked theory and provided general points on stock management.

The second part required an evaluation of the use of ICT for stock control. Strong responses were able to provide a detailed explanation of the merits and limitations of ICT with practical examples of technological solutions to illustrate points made. Weaker answers paid insufficient attention to the limitations of ICT.

© These questions are the property of the Royal Horticultural Society.
They may not be reproduced or sold.

The Royal Horticultural Society, Wisley, Woking, Surrey GU23 6QB