



RHS LEVEL 3 DIPLOMA IN HORTICULTURE WRITTEN EXAMINATION

10:00am Thursday 11th February 2010

MODULE F

Horticultural Environment & 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.

Please turn over/.....

ANSWER ALL QUESTIONS

MARKS

Q1 Identify **FOUR** characteristics of efficient communications.

2

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Q2 State **FOUR** uses for a job description.

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Q3 State **FOUR** benefits of a cash flow budget.

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Q4 State **THREE** benefits of a **NAMED** professional body within horticulture.

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Please see over/.....

ANSWER ALL QUESTIONS

MARKS

Q5 State **FOUR** examples of incentives used in selling horticultural goods/services.

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Q6 State **FOUR** benefits of stock control in a horticultural business.

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Q7 State **FOUR** forms of insurance that apply to small horticultural businesses.

2

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Please turn over/.....

ANSWER ALL QUESTIONS

MARKS

Q8 State what is meant by an 'environmental impact analysis'.

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Q9 Define an ecosystem.

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Q10 State **FOUR** factors to consider when replacing an existing beech hedge, assuming hotter, drier summers become more frequent within the United Kingdom.

2

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10:00am Thursday 11th February 2010

MODULE F

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

Sections B & 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.

Please turn over/.....

Section B – Horticultural Environment & Ecology

Answer **ONE** question only from this section

		MARKS
Q11	a) Outline FIVE NAMED environmental factors which determine the form of climax vegetation found in different parts of the British Isles.	10
	b) Describe how FIVE environmental factors can be manipulated to enable the horticulturist to grow plants of their choice in any part of the United Kingdom.	10
Q12	a) Evaluate the threats posed to wildlife habitats within the UK caused by horticultural practices.	12
	b) Review current conservation policies and initiatives in relation to this threat.	8

Please see over/.....

Section C – Resource Management in the Horticultural Enterprise

Answer TWO questions from this section

	MARKS
Q13 a) Describe the different types of financial records relevant to small horticultural businesses.	10
b) Evaluate the use of ICT (Information Communication Technology) for financial management.	10
Q14 a) Describe FIVE elements of a staff development strategy.	10
b) Describe the roles of a supervisor in achieving the aims of the organization.	5
c) Explain the benefits of motivation in a horticultural workforce.	5
Q15 a) Explain the term 'Marketing Strategy'.	2
b) Describe FIVE key elements of a successful marketing strategy with reference to a NAMED sector of the horticultural industry.	15
c) Name THREE sources of information to assist with a pricing strategy.	3
Q16 Describe, using NAMED examples, the key principles involved in complying with EACH of the following legislation relating to horticulture:	
i) plant breeders rights;	5
ii) notifiable diseases;	5
iii) plant passports;	5
iv) CITES.	5

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Module F

Horticultural Environment & Ecology

Resource Management in the Horticultural Enterprise

Candidates Registered	25		Total Candidates Passed	20	90.91%
Candidates Entered	22	88.00%	Passed with Commendation	5	22.73%
Candidates Absent	2	8.00%	Passed	15	68.18%
Candidates Deferred	0		Failed	2	9.09%
Candidates Withdrawn	1	4.00%			

Section A – Short Answer Questions

Candidates with poor handwriting should be aware of the problems this causes to examiners and there are still too many instances of candidates not clearly identifying the number of examples requested by the questions.

Q1 Identify **FOUR** characteristics of efficient communications.

The best answers were those concentrating on the broad and universal characteristics eg. Correct (appropriate) method eg. verbal, written; correct timing, correct content (language), correct reason (relevance), correct recipient(s), correct result (outcome).

Q2 State **FOUR** uses for a job description.

Job descriptions are useful in a variety of ways including the recruitment of staff, selection for redundancy, staff appraisal / job review, and identification of skills and training requirements. Also for grievance and disciplinary interviews.
Some candidates spent too much time on *describing* how job descriptions would be used.

Q3 State **FOUR** benefits of a cash flow budget.

Good answers included reduction of overdraft, anticipate surplus of cash, for short term investment, anticipate shortage of cash, use in business plans for expansion. However, current account money is not used for expenditure on major capital items and care is needed not to give this impression.

Q4 State **THREE** benefits of a **NAMED** professional body within horticulture.

A wide range of professional bodies was supplied by candidates and common benefits including lobbying power to governments, advertising and promotional ideas to the public and support for trade members including shows, advice and insurance. Educational courses and updating journals are other important benefits.

Q5 State **FOUR** examples of incentives used in selling horticultural goods/services.

Answers included discounts (based on quantities or particular days, buy one get one free, free gift, reassurance / flattery, vouchers and coupons. Price comparisons with competitors and retailer donations to local green campaigns are examples of successful incentives used in particular situation. Incentives are not always about price.

Q6 State **FOUR** benefits of stock control in a horticultural business.

Candidates who provided a wide range of examples were awarded higher marks. Sound benefits include detection of theft, reduction of wastage, reduction of deterioration of plants and chemicals, and reduction in stock holding and working capital. Avoiding “stock-outs” maintains profits and work schedules, both of key importance.

Q7 State **FOUR** forms of insurance that apply to small horticultural businesses.

Details were not asked for but too brief answers may not indicate a candidate’s true understanding of the difference between public and employer liability insurance, for example. Other forms of insurance relate to buildings, machinery, stock and taxation (National Insurance). Key person’s insurance needs to be explained in the context of health insurance eg. BUPA.

Q8 State what is meant by an ‘environmental impact analysis’.

Candidates answered this well as a comprehensive and pre-event analysis of the possible effect of a scheme on both biotic and abiotic factors and pollutants. The phrase “thorough and wide-ranging” is useful but good answers also included specific examples by name eg. People, plants, animals, water courses.

Q9 Define an ecosystem.

The words natural and stable are important in describing this environment of biotic (plants, animals and micro-organisms) and abiotic (water, air, solar energy, rocks, soil) factors which interact within a specific location.

“Puddles” were commonly mentioned but these are commonly unstable and very temporary. Ecosystems however are not defined by size.

Q10 State **FOUR** factors to consider when replacing an existing beech hedge, assuming hotter, drier summers become more frequent within the United Kingdom.

There was a range of suitable responses to this question but one rather obvious (but sadly missing) factor is to determine the cause of failure of the previous hedge. Good answers included diverse suggestions such as alternative, more drought resistant species (example required), soil improvements, irrigation and replacement with non-living screens.

Sections B & C – Structured Questions

Section B – Horticultural Environment & Ecology

- Q11** a) Outline **FIVE NAMED** environmental factors which determine the form of climax vegetation found in different parts of the British Isles.
- b) Describe how **FIVE** environmental factors can be manipulated to enable the horticulturist to grow plants of their choice in any part of the United Kingdom.

Aims of the Question

- a) Candidates were required to identify FIVE environmental factors which contribute to determining the CLIMAX vegetation in various parts of the British Isles. For each, they should record how that factor varies across the British Isles and how, as a consequence, the vegetation is influenced and altered. Named examples of vegetation type, e.g. deciduous woodland dominated by Oak, or named plant species, e.g. *Quercus petraea* should be given (however there is no compulsion to give named species). Factors that could be discussed include rainfall, temperature, moisture content of the soil, soil pH, wind speed, salinity of the soil or salt spray in the air, sunlight intensity and duration.
- b) The requirement here was to choose FIVE environmental factors and to describe how each could be controlled/alterd/manipulated to enable a change in that factor to be made so as to grow species/cultivars which otherwise could not be grown successfully in the ambient range of that factor. Five could be: temperature, light intensity, water availability (rainfall), wind speed (damage), soil pH.

Observations on Answers

- a) Some candidates described various ecosystems and said how each is influenced by various abiotic factors rather than focusing on specific environmental factors and how their influence determines the **CLIMAX** vegetation of the area. A discussion on the types and forms of garden plants that could be grown under differing conditions is not pertinent to the question and does not cover natural climax vegetation. Specific environmental factors need to be identified rather than a general appraisal of the 'conditions' prevalent in different parts of the UK. The word, 'mild', is rather vague and does not refer to a specific range and 'latitude' and 'altitude' involve the effects of several different factors, they are not environmental factors in their own right. In addition, 'Global Warming' is overall and embracing and does not identify a particular environmental factor. There was also some confusion between 'weather' and 'climate' when attempting to refer to five environmental factors. Candidates should keep to the UK, a discussion about xeromorphic plants in deserts is not pertinent.
- b) The best way to approach this answer would simply to have chosen five factors and addressed each one in turn saying how one could alter that factor to create favourable conditions in relation to that factor. A discussion on the best way to cultivate a particular crop was not pertinent unless it included some information on manipulating named environmental conditions, e.g. growing under fleece to protect from cold conditions (frost) or starting seedlings off in a glasshouse where a constant defined warm temperature could be achieved using heating and a thermostat.

- Q12** a) Evaluate the threats posed to wildlife habitats within the UK caused by horticultural practices.
- b) Review current conservation policies and initiatives in relation to this threat.

Aims of the Question

a) The aim here was for the candidate to identify several HORTICULTURAL practices within the UK which have a negative effect on wildlife. You not only have to say what the practice is but also to outline the problem(s) that it causes for the well-being of wildlife habitats. An example could be the removal of hedges (habitat destruction) to create larger growing areas which reduces shelter for birds and small mammals, reduces food sources for birds, small mammals and insects leading to a reducing in biodiversity in that area. Another could be the persistent use of plastic non-biodegradable pots which end up in landfill, causing habitat destruction because large areas of natural habitat are destroyed in creating landfill sites, leading to a reduction in the natural biodiversity of the area. Others could be, use of peat, installation of drainage systems, replacing native hedging with formal hedging, use of pesticides, use of artificial fertilisers, etc.

b) Here candidates needed to have mentioned eight policies and/or initiatives which have the effect of reducing the threat to wildlife. Policies could include the grants available to encourage environmentally-friendly practices as managed by Natural England or English Heritage and conservation policies as managed by DEFRA. Initiatives could include the use of peat-free composts to reduce the destruction of peat bog habitats; the use of biological pest control practices to reduce the use of pesticides and hence a reduction in the death of organisms in the environment due to bioaccumulation and biomagnification.

Observations on Answers

a) Candidates who identified threats and linked each to a specific problem gained more marks than those who gave a vague account of problems in the environment as a whole. Activities linked to agriculture like harvesting wheat or barley are not horticultural activities. In addition global problems such as the release of greenhouse gases causing global climate change are not limited to the UK and as such should not be included in the answer.

b) Both policies **and** initiatives should be discussed for a candidate to achieve full marks in this section. The link between the policy/initiative and a reduction in a threat should be made clear. Also any examples used should be related to horticultural activities, as discussed in part a).

General Comments

Candidates who gave concise answers, clearly distinguishing each point by using a new sentence or a break in the paragraph, were at an advantage from those whose points were muddled, and where the answer had a poor flow to it. There is no advantage in writing long paragraphs about one single point. This just wastes time and there is then a risk of not completing the exam in the time available.

Section C – Resource Management in the Horticultural Enterprise

- Q13** a) Describe the different types of financial records relevant to small horticultural businesses.
- b) Evaluate the use of ICT (Information Communication Technology) for financial management.

In this question candidates were expected to demonstrate knowledge at level 3 relating to financial records and to evaluate the use of ICT.

Some candidates answered this question well, demonstrating a thorough knowledge of these areas, including the following in their answers:

- Wages, including PAYE and NI;
- Profit and loss account;
- Balance sheet;
- Sales ledger;
- Purchase ledger.

However other candidates gave answers that were too simplistic for a level 3 qualification; suggesting filing bank statements, and till receipts which whilst good practice is not a sufficiently detailed answer.

It is strongly suggested that candidates carry out detailed background reading of the subject so that they can give **detailed factually correct** answers.

Similarly when evaluating ICT simply naming excel as a spreadsheet neither answers the question, nor is it appropriate as an answer for this examination.

The examiner was looking for a balanced evaluation of the use of ICT and was expecting to see consideration given to such areas as:

- Cost of implementing;
- Staff training required;
- EPOS or stock control systems;
- Data integrity and backing up of sensitive data;
- Data security;
- Cost benefit analysis.

- Q14** a) Describe **FIVE** elements of a staff development strategy.
- b) Describe the roles of a supervisor in achieving the aims of the organization.
- c) Explain the benefits of motivation in a horticultural workforce.

Candidates who scored high marks in this question were able to demonstrate a thorough theoretical knowledge of the subject.

High scoring answers for section a) included the following points:

- Benchmarking performance;
- Used to identify skills gaps;
- Makes full use of the skills existing staff have;
- The aligning of personal and organisational goals;
- If carried out well it can motivate staff;
- Gives the opportunity to review performance of employees;
- Can drive change.

The other two parts of the question were generally answered well.

However some candidates failed to get high marks in this question as they limited their answers to their own work experiences rather than being able to draw on knowledge gained by reading recommended management texts.

It is also recommended that candidates familiarise themselves with basic examination technique, in particular with regard to reading and answering questions and understanding concepts such as “describe”, “explain” and “evaluate.”

- Q15** a) Explain the term ‘Marketing Strategy’.
- b) Describe **FIVE** key elements of a successful marketing strategy with reference to a **NAMED** sector of the horticultural industry.
- c) Name **THREE** sources of information to assist with a pricing strategy.

Many candidates failed to get high marks in this question as they related their answers to the selling of products rather than demonstrating a thorough knowledge of the term Marketing Strategy.

In part a) of the question, candidates who included the following points in their explanation of a marketing strategy gained full marks:

A process that can allow a business to concentrate its limited resources on the greatest opportunities to increase sales and achieve a sustainable competitive advantage.

In part b) many candidates failed to gain full marks by discussing how to sell a product in a garden retail business rather than demonstrating a knowledge of the five key elements of a marketing strategy.

Candidates were awarded higher marks when a description of the strategy using accepted headings was included in the answer such as:

- Market research;
- Analysis of organisational strengths;
- The marketing mix;
- Monitoring and evaluation;
- 100% focus on customer satisfaction.

Q16 Describe, using **NAMED** examples, the key principles involved in complying with **EACH** of the following legislation relating to horticulture:

- i) plant breeders rights;
- ii) notifiable diseases;
- iii) plant passports;
- iv) CITES.

This question asked for named examples and key principles.

Candidates who did not give named examples were awarded no marks, highlighting the importance of reading the question and providing the information requested.

Many candidates failed to gain full marks by not stating the key principles involved in the area being questioned.

Candidates who scored high marks in a), plant breeders rights, included the following information in their answers:

- Description of the rights awarded to plant breeders;
- Plant material covered;
- The role of organisations such as Provar;
- Distinctness;
- Denomination;
- Penalties for non-compliance.

Candidates who scored high marks in b), notifiable diseases, included the following information in their answers:

- The role of DEFRA;
- The rationale behind notifiable disease legislation;
- Issues relating to *Phytophthora ramorum*;
- Penalties for non-compliance.

Candidates who scored high marks in c), plant passports, included the following information in their answers:

- The purpose of the scheme;
- The role of DEFRA;
- Who can issue Plant Passports;
- Who needs to be authorised;
- Penalties for non-compliance.

Candidates who scored high marks in d), CITES, included the following information in their answers:

- The role of CITES;
- The role of DEFRA;
- The scope of CITES;
- Compliance issues for plant collections;
- Penalties for non-compliance.

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