



**R3103**

**THE MANAGEMENT OF PLANT HEALTH**

**Level 3**

**Thursday 17 February 2011**

**11:15 – 12:00**

**Written Examination**

**Candidate Number:**.....

**Candidate Name:**.....

**Centre Number/Name:**.....

**IMPORTANT – Please read carefully before commencing:**

- i) The duration of this paper is **45 minutes**;
- ii) **ALL** questions should be attempted;
- iii) **EACH** question carries **10 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.

## ANSWER ALL QUESTIONS

**MARKS**

## Q1

Review the requirements for the safe storage of pesticides.

10

**Please see over/.....**

3

**Q2** a) Define the term partial soil sterilisation.

2

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.....

.....

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b) Describe **TWO** methods of partial soil sterilisation giving appropriate horticultural examples of the use of each.

6

**Please see over/.....**

- c) Identify **TWO** disadvantages of using partial soil sterilisation.

2

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

**Q3** a) Describe the symptoms and damage caused by **EACH** of the following pests:

- i) two spotted spider mite;
- ii) capsid bug;
- iii) horse chestnut miner.

6

**Please see over/.....**

b) Identify **TWO** different control methods for **EACH** of **TWO** pests named in a).

4

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

**Q4** a) Describe symptoms and damage caused by **EACH** of the following diseases:

- i) damping off;
- ii) clematis wilt;
- iii) rose black spot.

6

**Please see over/.....**



- b) Identify **TWO** different control methods for **EACH** of **TWO** diseases named in a).

4

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

**Q5** a) Describe the life-cycle of the peach potato aphid.

4

**Please see over/.....**





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## RHS LEVEL 3 CERTIFICATE IN THE PRINCIPLES OF PLANT GROWTH, HEALTH AND APPLIED PROPAGATION WRITTEN EXAMINATION

11:15am Thursday 17<sup>th</sup> February 2011

R3103

### THE MANAGEMENT OF PLANT HEALTH

<b>Candidates Registered</b>	<b>132</b>		<b>Total Candidates Passed</b>	<b>43</b>	<b>40.19%</b>
Candidates Entered	107	81.06%	Passed with Commendation	7	6.54%
Candidates Absent	18	13.64%	Passed	36	33.64%
Candidates Deferred	4	3.03%	Failed	64	59.81%
Candidates Withdrawn	3	2.27%			

**Q1** Review the requirements for the safe storage of pesticides.

In order for a complete answer to be put forward for this question, candidates were expected to identify and interpret sources of information found in pesticide regulations and statutory requirements relating to the safe storage of pesticides. (The Code of Practice for Using Plant Protection Products contains much of this information). Candidates should have been able to describe how the store was set up to manage the security and safety of the pesticides, as well as describing the competences needed in safe handling of pesticides.

**Q2** a) Define the term partial soil sterilisation.

Some candidates understood that partial soil sterilisation referred to the physical (heat) or chemical (fumigant) process that reduced or removed harmful organisms from the soil.

b) Describe **TWO** methods of partial soil sterilisation giving appropriate horticultural examples of the use of each.

Detail was lacking in this part of the question, candidates were not able to describe in sufficient detail two methods of soil sterilisation which should include description of equipment, names of chemicals used, and the process involved. Safety issues, timing, and temperature requirement relating to the application

was also needed for a complete answer.

- c) Identify **TWO** disadvantages of using partial soil sterilisation.

Candidates had the possibility of a number of responses to this part of the question. Many identified harmful organisms re-colonising the clean area. Safety implications and economics as well as issues relating to nutrient (manganese) toxicity, and problems associated with residues from chemical fumigants are also important considerations.

- Q3** a) Describe the symptoms and damage caused by **EACH** of the following pests:

- i) two spotted spider mite;
- ii) capsid bug;
- iii) horse chestnut miner.

Some candidates scored high marks as they described in close detail the symptoms and damage caused by each pest, identifying their feeding methods and how this caused specific damage in the plant, and which part of the plant was vulnerable. Further understanding of the pest was demonstrated where candidates identified the seasonality and/or condition that promoted pest infestation.

- b) Identify **TWO** different control methods for **EACH** of **TWO** pests named in a).

A range of control measures are needed in controlling pests and diseases to prevent them developing resistance. Candidates needed to identify two different controls such as a chemical control and a cultural or biological control, and name the products used.

- Q4** a) Describe symptoms and damage caused by **EACH** of the following diseases:

- i) damping off;
- ii) clematis wilt;
- iii) rose black spot.

This part of the question was generally well answered. Candidates were able to describe the typical symptoms and damage caused by all three diseases. Many candidates also substantiated their answers with information about the conditions that promoted the disease, such as damping off being a problem associated with seedlings in a protected environment, large flowered Clematis are more susceptible to clematis wilt, or that black spot disease increases in wet conditions.

- b) Identify **TWO** different control methods for **EACH** of **TWO** diseases named in a).

Managing plant diseases requires strategies including chemical, cultural and biological in order to prevent diseases developing resistance, and to be able to contain diseases in different scenarios. With that in mind, the question asks candidates to identify two different control measures, therefore referring to two chemical controls for a particular disease would not have been an adequate answer to obtain full marks.

- Q5** a) Describe the life-cycle of the peach potato aphid.

There were many full answers to this part of the question. It was pleasing to see correct terminology used to describe the reproduction methods. Also the identifying practical horticultural importance relating to its life-cycle. Only well composed diagrams and schematic drawings that can be easily interpreted are useful in answering this question and it is important to relate the aphids life-cycle to the seasons of the year and the host plants involved.

- b) Relate methods of control of peach potato aphid to its life-cycle.

There was lack of substance to this part of the question, after identifying chemical, cultural or biological controls; candidates did not substantiate their answers with the information relating to the aphids' life cycle.

- Q6** Describe, with **NAMED** examples, how bio-security measures are intended to prevent the distribution of pests and diseases through trade and plant movement.

The majority of candidates who attempted this question identified the hazards associated with moving plants across countries and the rules and set regulations in place to deal with it. Marks were awarded for this and some marks given for identifying one or two alien pests and diseases that are subject to legal controls and enforcements.

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