



**R2113**

**UNDERSTANDING THE PRODUCTION OF  
OUTDOOR VEGETABLES AND FRUIT**

**Tuesday 14 February 2012**

**13.30 – 14.10**

**Written Examination**

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

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

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

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

- i) The duration of this paper is **40 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/examples are required, they should include genus, species and where appropriate, cultivar.
- vii) Where **NAMED** crops are required, common names are acceptable.
- viii) Please note, sufficient lined space is provided. It is not necessary that all lined space is used when answering a question.

## ANSWER ALL QUESTIONS

**MARKS**

- Q1** a) Draw a clearly labelled diagram to show the construction details of a raised bed.

6

- b) State **FOUR** benefits of growing vegetables in a raised bed, compared to open ground production.

4

**Total Mark**

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

**Q2** Describe how **EACH** of the following can determine crop quality and yield by completing the table below:

- i) weed control;
- ii) irrigation.

	Factors determining quality and yield	
Weed control	1	
	2	
	3	
Irrigation	1	
	2	

**6**

**4**

Total Mark

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

**Q3** Describe the harvesting and storage of **EACH** vegetable crop listed by completing the table below:

- i) runner beans;
- ii) onions;
- iii) carrots.

	Harvesting	Storage
Runner beans		
Onions		
Carrots		

**3**

**4**

**3**

Total Mark

**Q4** a) Name **ONE** pest and **ONE** disease of potatoes.

**2**

b) Describe the symptoms of **EACH** pest and disease named in a).

4

c) State **TWO** control measures for **EACH** pest and disease named in a).

4

**Total Mark**[illegible]

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

22

- |          | Top Fruit | Soft Fruit |
|----------|-----------|------------|
| Examples | 1         | 1          |
|          | 2         | 2          |
|          | 3         | 3          |
|          | 4         | 4          |

- 6

6

**2**

[illegible]

8

7

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**R2113**

**UNDERSTANDING THE PRODUCTION OF  
OUTDOOR VEGETABLES AND FRUIT**

**Level 2**

**Tuesday 14 February 2012**

<b>Candidates Registered</b>	299	<b>Pass with Commendation</b>	57 (25.91%)
<b>Candidates Entered</b>	220	<b>Pass</b>	118 (53.64%)
<b>Absent/Withdrawn/Deferred</b>	79	<b>Fail</b>	45 (20.45%)
<b>Total Candidates Passed</b>	175 (79.55%)		

**Senior Examiner's Comments:**

1. Candidates should be able to demonstrate a good range of plant knowledge and be able to give accurately named plant examples where appropriate. Common names and generic names are often too vague and cannot be rewarded in the positive manner that genus, species and where appropriate, variety/cultivar can. This is particularly important when answering questions relating to particular (named) plant(s). Marks can only be awarded for these narratives where the example(s) are correctly and fully identified.
2. Candidates must be able to display accurate knowledge of the technical terms and concepts detailed in the syllabus, in the context of horticulture and be aware that wider interpretation will not be rewarded. The examination should be regarded as a possible introduction to higher level studies, which will only be open to those who are in possession of a clear understanding of the horticultural terms and concepts which are current.
3. The introductory rubric given on the first page of each question paper should be read carefully by candidates. At each examination there are a significant number of candidates who ignore or misread the instructions given and consequently may not perform as well as they could have done.
4. Candidates should pace themselves during each paper. The most successful candidates allow sufficient time to read the question thoroughly before answering it and also take time to read through their answers. They should take care to write as legibly as possible, so that the examiner is in no doubt about what is intended.

5. Candidates need to interpret key words within questions, particularly those such as 'state', 'list' and 'describe'. Questions requiring descriptions or explanations obviously require a more detailed answer than those requiring a list.
6. It is important to ensure that responses to questions are to the point. Candidates should bear in mind that small sketches might be used to convey information more succinctly than words.
7. Successful candidates ensure that their answers are focused and to the point. It is disappointing when they cannot be rewarded for their efforts because the answer is irrelevant to the particular question. Candidates should take note of the mark allocation for specific sections and allocate their time and efforts accordingly.
8. Diagrams can enhance an answer and where appropriate can replace detailed descriptions. They should be large, clear and well annotated, and preferably in pencil. Colour may be used successfully but only where it is relevant to the answer.
9. In each examination it is clear that some candidates are ill prepared to answer papers of the type set. It is essential that candidates have the opportunity to practice questions. Ideally some papers should be answered in a time constrained situation.
10. Candidates should be aware of the reading list of suggested books for the RHS Level 2 Certificate in The Principles of Garden Planning, Establishment and Maintenance which is available from the Qualifications Section and can also be found on the RHS website together with past papers.

#### Examiners' Comments:

		<b>Marks</b>
<b>Q1</b>	a) <i>Draw a clearly labelled diagram to show the construction details of a raised bed.</i>	<b>6</b>
	b) <i>State <b>FOUR</b> benefits of growing vegetables in a raised bed, compared to open ground production.</i>	<b>4</b>
	a) Those candidates who gained full marks drew large clearly labelled diagrams of the construction of a raised bed. Details included; the method of constructing the corners, the overall dimensions of the bed and its depth, constructional materials used and their maintenance.	
	b) The best candidates provided a range of benefits specific to growing vegetables in a raised bed e.g. improved ease of access, increased soil temperature, improved drainage and enhanced root health and were awarded full marks.	

**Q2**

Describe how **EACH** of the following can determine crop quality and yield by completing the table below:

- i) weed control;
- ii) irrigation.

**6**  
**4**

	<b>Factors determining quality and yield</b>
<b>Weed control</b>	<p>1</p> <p>2</p> <p>3</p>
<b>Irrigation</b>	<p>1</p> <p>2</p>

- i) Candidates included the following factors with regard to weed control and its effect on the quality and yield of crops; competition for light, water and nutrients, crop hygiene i.e. the overwintering of pests and diseases, difficulties that can occur when harvesting crops if they are infested with weeds and restricted air movement due to the matted foliage of weeds.
- ii) To gain maximum marks for this section of the question candidates were required to describe how irrigation must be applied in enough quantity and at the optimum time in the crops period of growth for optimum results. The optimum rate of irrigation is also important to avoid run off and capping depending on the soil texture and structure. Other acceptable answers were that insufficient water can result in small produce and a much reduced yield.

**Q3**

Describe the harvesting and storage of **EACH** vegetable crop listed by completing the table below:

- i) runner beans;
- ii) onions;
- iii) carrots.

	<b>Harvesting</b>	<b>Storage</b>
<b>Runner beans</b>		
<b>Onions</b>		
<b>Carrots</b>		

**3**

**4**

**3**

- i) Candidates who provided good descriptions of the harvesting and storage of runner beans stated that they should be harvested carefully by hand when young and frequently to encourage more beans and to avoid damage and store them in polythene bags in the fridge or slice and freeze them and gained maximum marks.
- ii) The best candidates stated that onions should be harvested by lifting them when the tops bend over naturally and left in rows on the soil to dry for a few weeks (depending on the weather). They can then be stored in nets or plaits or packaged carefully in layers in boxes at ambient or room temperature.
- iii) Descriptions of the harvesting of carrots included details of carefully lifting them using a fork to avoid damage to the roots and storing them either in a clamp in rows in the field or clamped with straw, storing them in high humidity or freezing.

- Q4** a) Name **ONE** pest and **ONE** disease of potatoes. **2**
- b) Describe the symptoms of **EACH** pest and disease named in a). **4**
- c) State **TWO** control measures for **EACH** pest and disease named in a). **4**

- a) A range of suitable examples were named by candidates and included; peach potato aphid, slugs and potato eelworm as pests and potato blight, common potato scab and potato black leg as diseases all of which were awarded full marks.
- b) Candidates who gave full descriptions of the pest and disease gained maximum marks e.g. the symptoms of aphids are punctured foliage, shoot and leaf distortion, presence of sooty mould and viral symptoms. Symptoms of potato blight include; dark blotches developing on the leaves which blacken and die and infected tubers rot in the ground or in the store.
- c) Candidates provided a range of control methods including cultural, biological and physical rather than just chemical. Aphids can be controlled by the use of a systemic insecticide at the time of planting to avoid a build up during the critical time and early stages of plant growth. The use of resistant varieties earthing up and monitoring weather conditions are suitable methods to control potato blight.

- Q5** a) List **FOUR** examples of **EACH** of the following types of fruit:

- i) top fruit; **2**
- ii) soft fruit. **2**

	<b>Top Fruit</b>	<b>Soft Fruit</b>
<b>Examples</b>	1	1
	2	2
	3	3
	4	4

- b) Describe **THREE** distinct factors important in the selection of cultivars grown for **ONE** of the fruit types listed in a). **6**

- a) The majority of candidates provided names of a range of top fruit e.g. apples, pears, plums, green gauges and cherries and soft fruit e.g. strawberries, gooseberries, black/red currants and raspberries and gained full marks.

Marks could not be awarded when a few candidates confused top fruit and soft fruit.

- b) Candidates who linked their answers to the selection of a cultivar were able to gain full marks. Factors described for apples included; whether the cultivar is a diploid or triploid, pollination groups, compatibility with rootstocks, whether they are dessert or culinary, their potential yield and shelf life and their storage capability.

- Q6** a) *Identify **TWO** reasons why successful cross pollination and fertilisation are important in apple production.* **2**
- b) *State **FOUR** benefits of providing shelter in an apple orchard.* **8**

- a) Candidates who understood the processes of pollination and fertilisation i.e. only pollinated flowers are capable of producing fruit and without successful fertilisation after pollination, no fruit will be formed were able to identify the importance of successful cross pollination in apple production and were awarded maximum marks.
- b) The majority of candidates provide a good range of benefits of providing shelter in an apple orchard which included; avoids physical damage to the trees, avoids wind scorch, maximises flower development, improves bee and other pollinator activity to maximise pollination and avoids excessive transpiration and water loss and gained full marks.

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