



R2113

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

Level 2

Tuesday 19 June 2018

13:30 – 14:20

Written Examination

Candidate Number:

Candidate Name:

Centre Number/Name:

IMPORTANT – Please read carefully before commencing:

- i) The duration of this paper is **50** minutes;
- ii) **ALL** questions should be attempted;
- iii) **EACH** question carries **10 marks**;
- iv) Write your answers legibly in the lined space provided. It is **NOT** necessary that all lined space is used in answering the questions;
- v) Use **METRIC** measurements only;
- vi) Use black or blue ink only. Pencil can be used for drawing purposes only;
- vii) Where plant names are required, they should include genus, species and where appropriate, cultivar;
- viii) Where a question requires a specific number of answers; only the first answers given that meet the question requirement will be accepted, regardless of the number of answers offered;
- ix) Please note, when the word '**distinct**' is used within a question, it means that the items have different characteristics or features.

ANSWER ALL QUESTIONS

Q1 a) Name **TWO** distinct plants suitable for use as a living windbreak.

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MARKS

2

b) State **TWO** benefits **AND TWO** limitations of living and non-living windbreaks by completing the table below.

	Living	Non-living
Benefits	1	1
	2	2
Limitations	1	1
	2	2

2

2

2

2

Total Mark

Please see over/.....

MARKS

Q2 a) Name **FOUR** distinct methods used to advance the productive season of outdoor food crops.

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b) Describe **TWO** of the methods named in a) with the aid of a clearly labelled diagram for **EACH**.

6

Total Mark

Please turn over/.....

MARKS

Q3 Describe the establishment of a **NAMED** crop of winter cabbage under **EACH** of the following headings:

- i) named cultivar;
- ii) sowing;
- iii) transplanting.

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i).....

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ii).....

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iii).....

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b) State how an ideal soil pH can be achieved in the production of a crop of winter cabbage.

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Total Mark

Please see over/.....

Q4 For **EACH** of the following statements insert the missing words into the spaces within the text, from the selection provided below.

- a) **Base Calcium Compound**
- General Iron Late**
- Nitrogen Nutrients Potassium**
- Top**

Vegetable plants need a range of and the three most often in short supply are, phosphorus and Fertilizers can be applied as adressing before sowing or planting or as a dressing during active plant growth.

5

- b) **Colour Crop Feeding**
- Flavour Flowers Forking**
- Leaves Roots Splitting**
- Stems Trusses Watering**

Over -..... of some vegetable crops may result in rootin carrots; loss of in tomatoes; and the development of at the expense of

5

Total Mark

Please turn over/.....

Q5 a) Describe a suitable support system for a **NAMED** summer fruiting raspberry.

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b) For **ONE NAMED** common pest of raspberries, describe:

- i) the symptoms;
- ii) **ONE** control measure.

i).....

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ii).....

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1

2

1

Total Mark

Please see over/.....

MARKS

Q6 Describe the harvesting and storage of a **NAMED** apple crop under **EACH** of the following headings:

- i) named cultivar;
- ii) harvesting for storage;
- iii) method of storage.

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i).....

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ii).....

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Total Mark

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Sharing the best in Gardening

R2113

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VEGETABLES & FRUIT**

Level 2

Tuesday 19 June 2018

Candidates Registered	1004		Total Candidates Passed	744	87%
Candidates Entered	852	85%	Passed with Commendation	415	49%
Candidates Absent/Withdrawn	140	14%	Passed	329	38%
Candidates Deferred	12	1%	Failed	108	13%

Senior Examiner's Comments:

- 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.
- Candidates must be able to display accurate knowledge of the technical terms and concepts detailed in the syllabus, in the context of horticulture and also 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.
- 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, ensuring that labels are properly attached to the features they describe. Diagrams should preferably be 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. Appropriate feedback must, in any case be provided.

Q1 a) Name **TWO** distinct plants suitable for use as a living windbreak.

b) State **TWO** benefits **AND TWO** limitations of living and non-living windbreaks by completing the table below.

	Living	Non-living
Benefits	1	1
	2	2
Limitations	1	1
	2	2

2

2

2

2

Q1a) The majority of candidates were able to name two plants suitable for use as a living windbreak e.g. *Fagus sylvatica*, *Carpinus betulus* and *Crataegus monogyna* and were awarded full marks.

Q1b) The best candidates clearly stated the benefits and limitations of living and non-living windbreaks and achieved full marks. Acceptable answers included:

Benefits

Living windbreaks are beneficial to wildlife, long lived and aesthetically pleasing.

Non-living windbreaks are quick and easy to erect, do not take up a lot of space and are low maintenance.

Limitations

Living windbreaks take time to establish, may harbour pests and diseases and require annual maintenance i.e. pruning.

Non-living windbreaks are not aesthetically pleasing, do not provide a habitat for wildlife and may not be long lasting.

Q2 a) Name **FOUR** distinct methods used to advance the productive season of outdoor food crops.

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b) Describe **TWO** of the methods named in a) with the aid of a clearly labelled diagram for **EACH**.

6

Q2a) Most candidates named suitable methods to advance the productive season of outdoor food crops and gained maximum marks. These included:

- Cloche
- Black polythene
- Low polythene tunnel
- Cold frame
- Hot bed
- Forcing pot

Candidates who named greenhouses and walk in polythene tunnels could not be awarded any marks as these are used for protective cropping.

Q2b) Candidates who provided appropriate diagrams and descriptions for methods used to advance the productive season were awarded full marks. Suitable answers included:

Low Polythene Tunnel has clear polythene stretched over metal hoops or a frame which is dug into the soil or weighted down. This helps to warm the soil, protects the crop from cold winds and provides frost protection to young plants.

Cold Frame is a solid framed structure with glass or twin-walled polycarbonate cladding. It provides protection from early frosts for young plants and protection for winter salad crops and carrots.

Q3 a) Describe the establishment of a **NAMED** crop of winter cabbage under **EACH** of the following headings:

- i) *named cultivar;*
- ii) *sowing;*
- iii) *transplanting.*

1
3
3

b) State how an ideal soil pH can be achieved in the production of a crop of winter cabbage.

3

Q3a) Maximum marks were awarded to candidates who were able to describe the establishment of a crop of winter cabbage.

- i) **Named Cultivar** e.g. January King, Kilaton F₁, Tundra
- ii) **Sowing** takes place from April to June in an outdoor seedbed in drills 1-2cm deep and 15cm apart. The seeds are covered with soil and watered. Alternatively one or two seeds can be sown 1-2cm deep in individual modules and grown under glass.
- iii) **Transplanting** is carried out in June and July when the plants have 5-6 true leaves or are approximately 10cm tall. They are planted 40-50cm apart in rows that are 40-60cm apart. It is important to plant them deeply by puddling (watering them in) and firming them well to avoid wind rock. Collars should be fitted around the base of the plants to protect them against cabbage root fly and netted to protect them against damage from pigeons.

Q3b) The majority of candidates gained maximum marks for correctly stating that cabbage prefer an alkaline soil i.e. a soil with a pH of 6.5 or above to avoid club root. The pH of an acid soil can be raised by incorporating ground limestone into the soil at least six months prior to planting, ideally in the winter while preparing the soil.

Q4 a) For **EACH** of the following statements insert the missing words into the spaces within the text, from the selection provided below.

- Base Calcium Compound**
- General Iron Late**
- Nitrogen Nutrients Potassium Top**

b) Vegetable plants need a range of and the three most often in short supply are, phosphorus and
Fertilizers can be applied as adressing before sowing or planting or as a dressing during active plant growth.

5

- Colour Crop Feeding**
- Flavour Flowers Forking**
- Leaves Roots Splitting**
- Stems Trusses Watering**

Over -..... of some vegetable crops may result in rootin carrots; loss of in tomatoes; and the development of at the expense of

5

Q4a) Candidates who were able to select the correct words to complete the statements correctly gained full marks. These were:

- a) Vegetables need a range of **nutrients** and the three most often in short supply are **nitrogen**, phosphorus and **potassium**. Fertilisers can be applied as a **base** dressing before sowing or planting or as a **top** dressing during active plant growth.
- b) Over-**watering** of some vegetable crops may result in root **splitting** in carrots; loss of **flavour** in tomatoes; and the development of **leaves** at the expense of **roots**.

Q5 a) Describe a suitable support system for a **NAMED** summer fruiting raspberry.

6

b) For **ONE NAMED** common pest of raspberries, describe:

1

i) the symptoms;

2

ii) **ONE** control measure.

1

Q5a) The most popular support system that is suitable for summer fruiting raspberries that was described by candidates who achieved maximum marks is post and wire.

To support a crop of Raspberry Glen Moy, Glen Ample, Malling Delight or Malling Jewel 2m high posts are set in a row 3m apart with wire strained between them at distances of 75cm, 1.1m and 1.5m. The wires must be kept taut between the posts to support the raspberry canes which are tied to them.

Alternative methods of support which were also awarded marks are the Parallel Wire method and the Scandinavian method.

Q5b) A range of pests of raspberries were described by candidates who were awarded full marks. Acceptable answers included:

i) Raspberry aphid distorts the foliage and reduces the vigour of raspberries.
Blackbirds either remove and eat the whole fruit or partially eat and damage the fruits.

ii) Raspberry aphid can be controlled by the use of a pesticide e.g. Fatty acids or Deltamethrin
Blackbirds can be controlled by either the use of netting or constructing a fruit cage.

Q6 Describe the harvesting and storage of a **NAMED** apple crop under **EACH** of the following headings:

- | | | |
|------|--------------------------------|----------|
| i) | <i>named cultivar;</i> | 1 |
| ii) | <i>harvesting for storage;</i> | 4 |
| iii) | <i>method of storage.</i> | 5 |

Q6 Many candidates were able to describe the harvesting and storage of an apple crop and gained full marks. Suitable answers included:

- i) **Named Cultivar** Cox's Orange Pippin, Bramley's Seedling. Mid or late season cultivars are good for storage.

- ii) **Harvesting for Storage** takes place when the apples are slightly under-ripe and still firm. The fruits should be free from pests and diseases, bruises and blemishes. Harvesting is carried out on a dry, cool day by cupping the fruit in the hand and twisting. The fruit will not come away as easily as fully ripe fruits.

- iii) **Method of Storage** Apples can be stored in apple racks/drawers, wooden boxes or perforated plastic bags. The fruits should be kept in vermin free, cool, frost free and dark locations at a temperature of 3-5°C. Apples stored in wooden racks or boxes must be individually wrapped in grease-proof paper and not touching each other.

