

Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
GENERAL CERTIFICATE OF SECONDARY EDUCATION**

**B492/01**

**ENVIRONMENTAL AND  
LAND-BASED SCIENCE**

**Amenity Horticulture (Foundation Tier)**

**TUESDAY 22 JUNE 2010: Morning**

**DURATION: 45 minutes**

**SUITABLE FOR VISUALLY IMPAIRED CANDIDATES**

**Candidates answer on the Question Paper**

**OCR SUPPLIED MATERIALS:**

**None**

**OTHER MATERIALS REQUIRED:**

**Electronic calculator**

**Pencil**

**Ruler (cm/mm)**

**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS TO CANDIDATES**

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **ALL** the questions.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your Candidate Number, Centre Number and question number(s).

## **INFORMATION FOR CANDIDATES**

- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this paper is **36**.

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**Answer ALL the questions.**

**1 Some students are building cloches.**

**The cloches will be used outdoors to cover some newly sown seeds.**

**What is the BEST reason for using a cloche?**

- A allows easier pricking out of seedlings**
- B prevents water from reaching the seeds**
- C provides warmer conditions for germination**
- D stops strong winds blowing seeds away**

**Answer A, B, C or D \_\_\_\_\_ [1]**

**2 This is part of a leaflet attached to a houseplant.**



**What is the best reason for POTTING ON a plant?**

- A controls pest and disease problems**
- B encourages development of side shoots**
- C prevents growth of moss on the pot**
- D provides the plant with extra nutrients**

**Answer A, B, C or D \_\_\_\_\_ [1]**

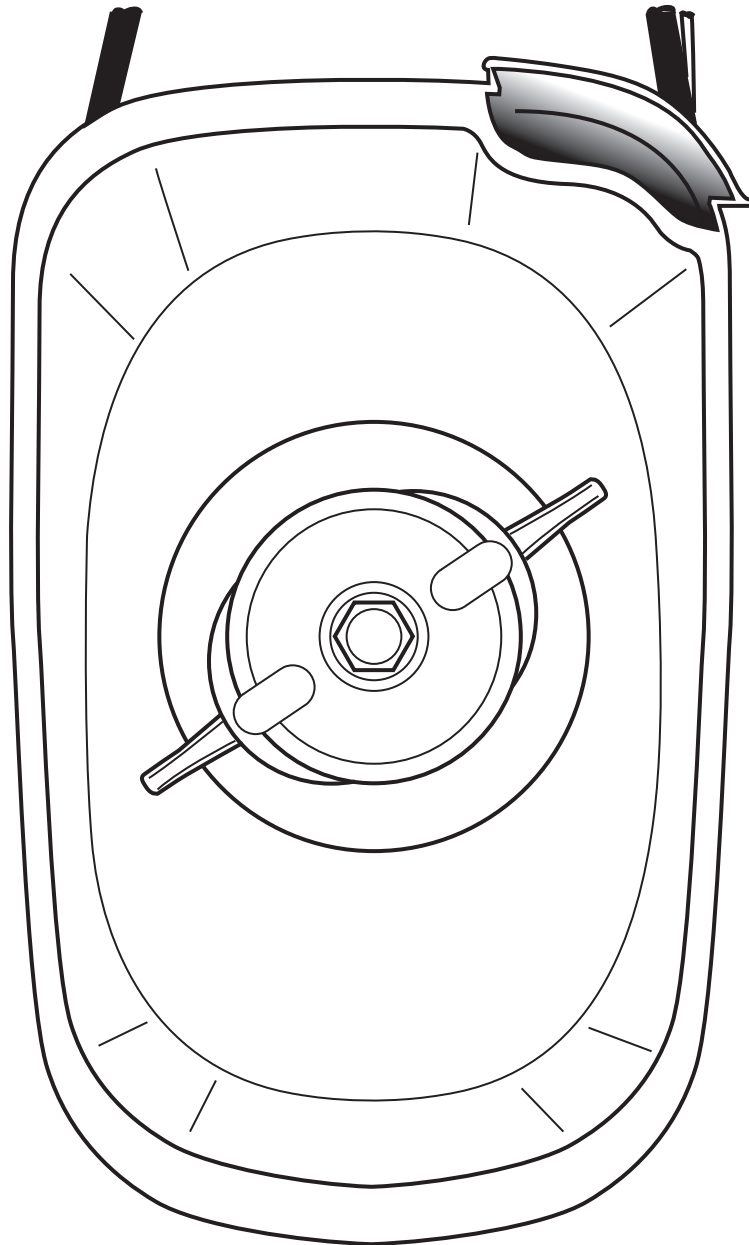
**3 Different plants have different life cycles.**

**What is a plant that normally lives for two years called?**

- A annual**
- B biennial**
- C half hardy**
- D perennial**

**Answer A, B, C or D \_\_\_\_\_ [1]**

4 This is the underneath of a lawn mower.



What type of lawn mower is this?

- A cutter
- B cylinder (sidewheel)
- C hover
- D wheeled rotary

Answer A, B, C or D \_\_\_\_\_ [1]

**5 A nursery has a new range of plants for sale.**

**The plants look healthy and they are just about to flower.**

**Which TWO of these activities are likely to produce the most sales?**

**A Make sure the plants are put in sunlight.**

**B Put clear prices on the plants.**

**C Re-pot the plants into larger pots.**

**D Train staff members to talk about them to visitors.**

**E Water the plants so they are constantly wet.**

**Select TWO from A, B, C, D or E \_\_\_\_\_ and \_\_\_\_\_[2]**

**6 A customer complains about a houseplant they have bought.**

**The garden centre supervisor checks the plant and thinks that it may have been over-watered.**

**Which TWO of the following are signs that the plant may have been over-watered?**

- A fertiliser cannot be seen in the compost**
- B plant label picture has faded**
- C plant growth is long and spindly (etiolated)**
- D there are no white roots in the compost**
- E wilting of the leaves of the plant**

**Select TWO from A, B, C, D or E \_\_\_\_\_ and \_\_\_\_\_[2]**



**7 Some students are going to work in a nursery as part of their work experience.**

**There are possible hazards working in a nursery.**

**The nursery uses one greenhouse with plants in trays on the floor along one side and plants and shrubs in pots on the floor along the other. The plants and shrubs are given fertiliser and watered regularly using a hose and watering can.**

**Tools and gardening equipment are kept inside the greenhouse.**

**Write down TWO things that must be done to keep the greenhouse free from hazards.**

**1** \_\_\_\_\_

\_\_\_\_\_

**2** \_\_\_\_\_

\_\_\_\_\_ [2]

**8 The same type of plants have been grown in a flower bed for over 15 years.**

**In recent years the plants have not grown as well as before.**

**The weather is NOT thought to be the reason.**

**Suggest a reason why the plants are not growing so well in this soil.**

\_\_\_\_\_ [1]  
\_\_\_\_\_

**9 A greenhouse must be sited in the correct place if it is going to be most efficient.**

**Name THREE things which may affect the choice of site.**

**1** \_\_\_\_\_

\_\_\_\_\_

**2** \_\_\_\_\_

\_\_\_\_\_

**3** \_\_\_\_\_

\_\_\_\_\_ [3]

**10 Students are planning to plant up some tubs for summer flowering plants.**

**Name TWO summer flowering plants which would be suitable for growing in these tubs.**

**1 \_\_\_\_\_**

**2 \_\_\_\_\_ [2]**

**11 A gardener wishes to plant a tree at the bottom of their small garden. The planting site is beside the boundary fence and close to a deck.**

**The tree must not shade the whole of the garden.**

**Suggest a tree for this garden and give a reason for your choice.**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [2]

**12 A grower wishes to produce sunflowers for the cut flower market.**

**The grower wants to test a small crop before planting a large area.**

**A catalogue offers the following cultivars (varieties).**

<b>SUNFLOWER NAME</b>	<b>HEIGHT IN cm</b>	<b>SEEDS PER PACKET</b>	<b>COST PER PACKET</b>
<b>Arava Sunray (F<sub>1</sub> hybrid)</b>	<b>60</b>	<b>20</b>	<b>£1.85</b>
<b>Irish Eyes</b>	<b>45</b>	<b>35</b>	<b>£1.35</b>
<b>Ruby Sunset</b>	<b>100</b>	<b>20</b>	<b>£2.40</b>
<b>Total Eclipse</b>	<b>50</b>	<b>20</b>	<b>£1.55</b>
<b>Western Sunset</b>	<b>75</b>	<b>30</b>	<b>£1.95</b>

**(a) Which of the packets contains the most seeds?**

**Answer \_\_\_\_\_ [1]**

**(b) What is the cost, per seed, of Sunflower ‘Ruby Sunset’?**

- A 2.4p**
- B 5p**
- C 12p**
- D 20p**
- E 24p**

**Answer A, B, C, D or E \_\_\_\_\_ [1]**

**(c) Which of these sunflowers is most likely to need staking?**

**Answer \_\_\_\_\_ [1]**

**(d) 'Arava Sunray' is described as being an  $F_1$  hybrid.**

**Suggest TWO advantages an  $F_1$  hybrid could give the grower.**

**1 \_\_\_\_\_**

\_\_\_\_\_

**2 \_\_\_\_\_**

\_\_\_\_\_ **[2]**

**13 The grower tries the type of sunflower called ‘Western Sunset’.**

**These are the records he kept on the first crop.**

	<b>NUMBER</b>
<b>seeds sown</b>	<b>500</b>
<b>seedlings emerged</b>	<b>450</b>
<b>plants after first hoeing</b>	<b>288</b>
<b>plants in bud</b>	<b>268</b>
<b>flowers produced</b>	<b>402</b>

**(a) What percentage of the total seeds sown failed to germinate?**

**Answer \_\_\_\_\_ % [1]**

**(b) There were no pest or disease problems in this crop.**

**Calculate the change in numbers between the seedlings emerging and the plants after first hoeing AND explain this change.**

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**[2]**

**14 Sarah is getting ready to cut the lawn with an electric mower.**

**Suggest TWO pieces of advice you would give so that she carries out the job safely.**

**1** \_\_\_\_\_

\_\_\_\_\_

**2** \_\_\_\_\_

\_\_\_\_\_

**[2]**

**15 One way to make a new lawn is to use grass seed.**

**Describe how a new lawn may be made using grass seed.**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**[3]**



**16 Dahlias are popular summer flowering plants.**

**Dahlias with brightly coloured flowers may be propagated from the plant's root tuber.**

**(a) Describe WHEN and HOW a dahlia may be propagated from its root tuber.**

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[2]

**Powdery mildew is a common disease of dahlias.**

**(b) Explain THREE reasons why it is important to control powdery mildew as soon as it is spotted.**

**1** \_\_\_\_\_

\_\_\_\_\_

**2** \_\_\_\_\_

\_\_\_\_\_

**3** \_\_\_\_\_

\_\_\_\_\_

[3]

**END OF QUESTION PAPER**

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