

Please check the examination details below before entering your candidate information

Candidate surname					Other names					
Pearson BTEC Level 3 Nationals Extended Certificate*, Foundation Diploma, Diploma*, Extended Diploma	Centre Number					Learner Registration Number				
Monday 13 January 2020										
Afternoon (Time: 1 hour 30 minutes)					Paper Reference 20066K					
Agriculture; Countryside Management; Forestry and Arboriculture, Horticulture Unit 2: Plant and Soil Science <i>*Not relevant in Forestry or Arboriculture</i>										
You do not need any other materials.									Total Marks	

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Answer ALL questions. Write your answers in the spaces provided.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 Figure 1 shows a cross-section of a dicotyledon stem.

(a) Label structures A and B in Figure 1.

(2)

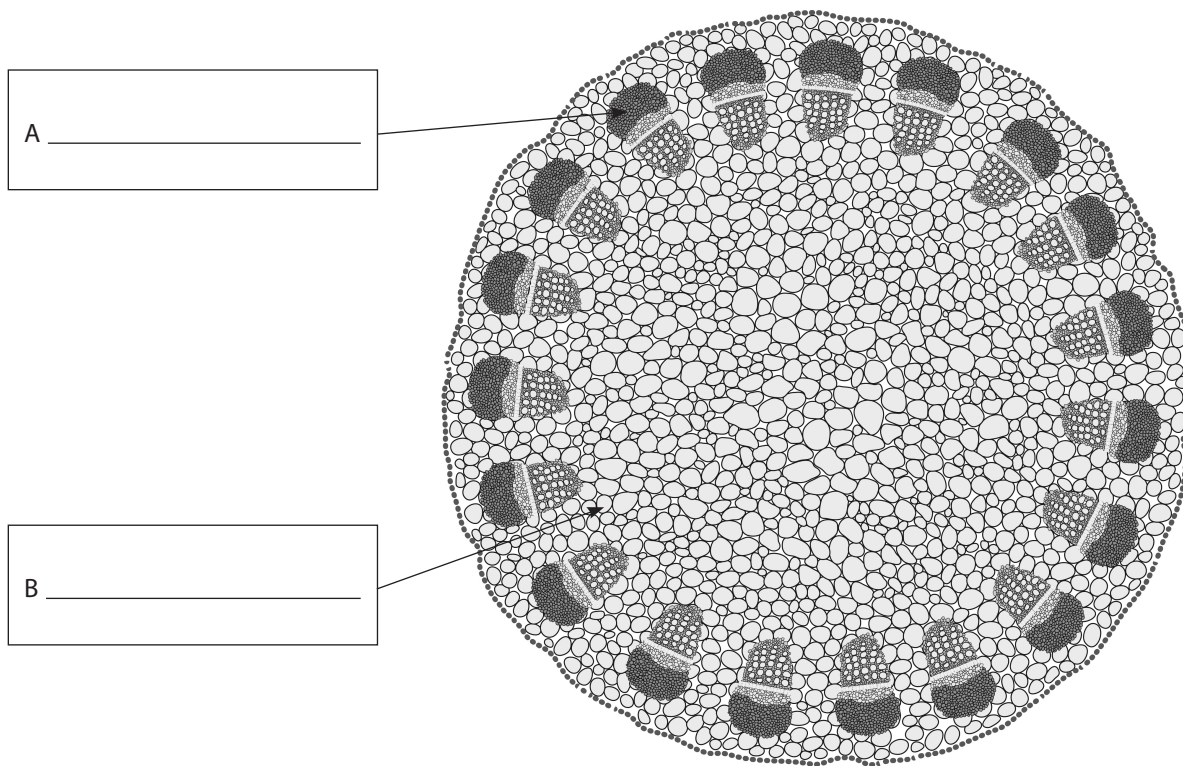


Figure 1

(b) Give **two** functions of xylem in a plant.

(2)

1

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2

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(c) State how a monocotyledon flower is different in structure to a dicotyledon flower.

(2)

1

2

(d) Explain **two** ways plant structures are adapted to store food.

(4)

1

2



(e) Analyse how plant storage structures are used in asexual reproduction.

(6)

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(Total for Question 1 = 16 marks)

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Question 2 is on the next page



P 6 3 1 6 2 A 0 5 1 6

- 2 (a) Figure 2 shows the structure of a leaf.
Label areas A and B on this leaf.

(2)

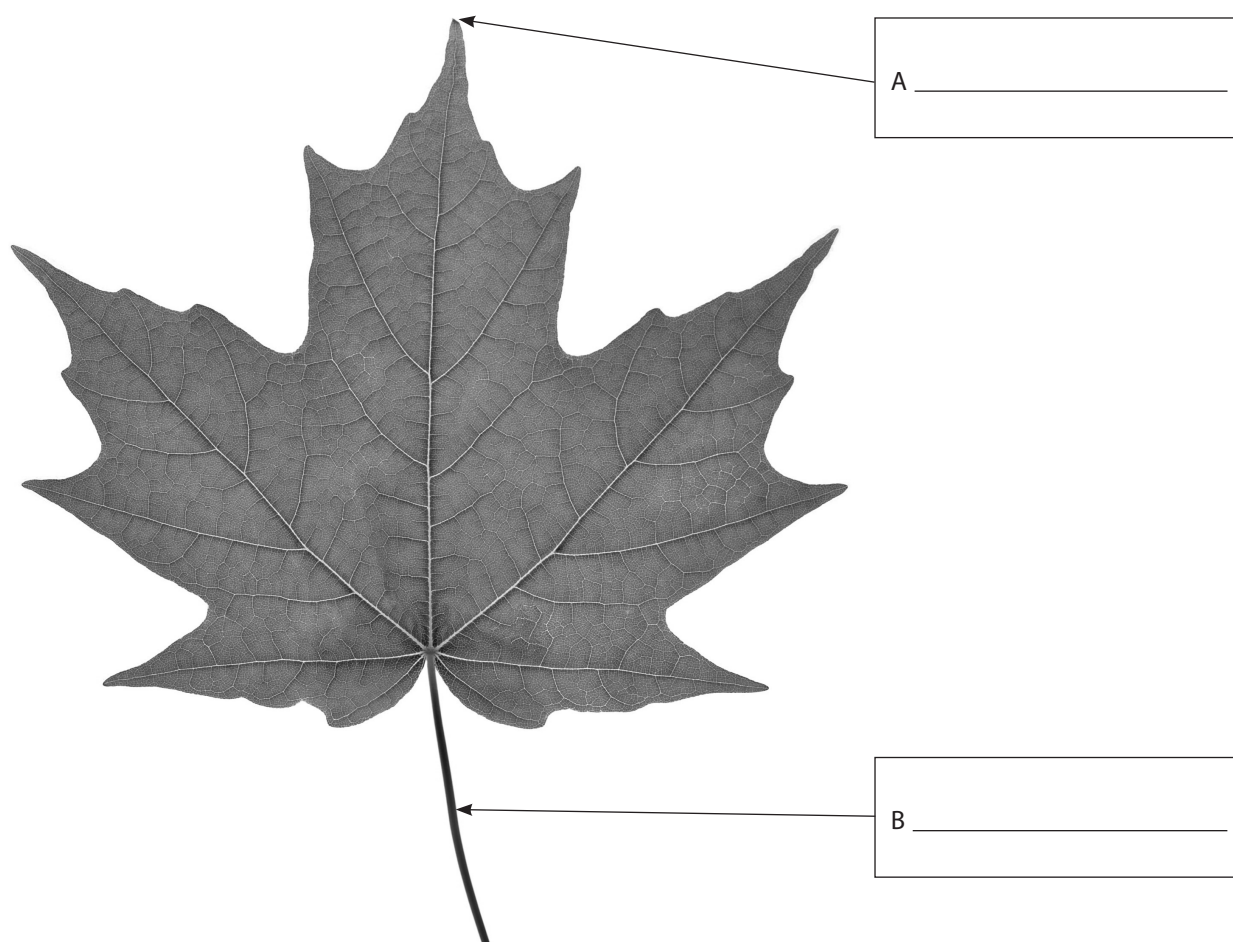


Figure 2

- (b) Describe the characteristics of an *Ilex* leaf.

(4)

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(4)

2

Discuss the impact this weather will have on the establishment and success of a spring sown crop in a field.

(6)

(Total for Question 2 = 16 marks)



3 Some plants are grown in containers using a potting compost, while others are field grown.

Discuss the advantages and disadvantages of using potting compost rather than growing plants in a field.

(8)

(Total for Question 3 = 8 marks)

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Question 4 is on the next page



4 The table below shows the characteristics of two types of plant reproductive system.

(a) Complete the table by writing the missing information in the correct boxes.

(2)

	Plant A	Plant B
Pollination type	Entomophilous/insect	
Petals	Large and/or colourful	Insignificant
Pollen type		Lightweight and separate
Pollen amount	Small amount	Large amount

Table 1

(b) State **two** features of a cross-pollinating plant.

(2)

1

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2

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(c) Explain **one** advantage of self-pollination.

(2)

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(d) Explain **two** ways an area of land can be managed to increase plant pollination levels.

(4)

1

2

(e) The soil in a field has a low water holding capacity.

Analyse how this water holding capacity impacts the yield of a crop.

(6)

(Total for Question 4 = 16 marks)



P 6 3 1 6 2 A 0 1 1 1 6

5 Organic matter provides plant nutrients to the soil.

(a) Give **one** other benefit to the soil when using organic matter.

(1)

The table below shows the nutrient analysis of three fertilisers.

Fertiliser	% N	% P	% K
A	0.7	0.3	0.6
B	4.0	2.5	2.3
C	3.5	18.0	0

Table 2

(b) Give **one** reason why fertiliser C is most suitable when planting new trees.

(1)

(c) Describe the effects of the overapplication of a fertiliser on a plant.

(2)

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(d) The table below shows two methods of irrigation for plants.

Complete the table by writing the missing information in the correct boxes.

(2)

Method of irrigation	Description of technique	Disadvantage
	Watering each plant separately through micro tubes	Tubes are easily blocked
Ebb and flow		Diseases spread through the irrigation to all plants

Table 3

(e) Describe **two** factors affecting the rate of transpiration.

(4)

- 1
- 2



P 6 3 1 6 2 A 0 1 3 1 6

(f) Analyse the impact of light availability on plant growth.

(6)

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(Total for Question 5 = 16 marks)

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This image shows a single sheet of white paper with horizontal dashed lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the paper.

TOTAL FOR PAPER = 80 MARKS





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