

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

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Learner Registration Number

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**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**

***\*Not relevant in Forestry or Arboriculture***

**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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**Pearson**

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)

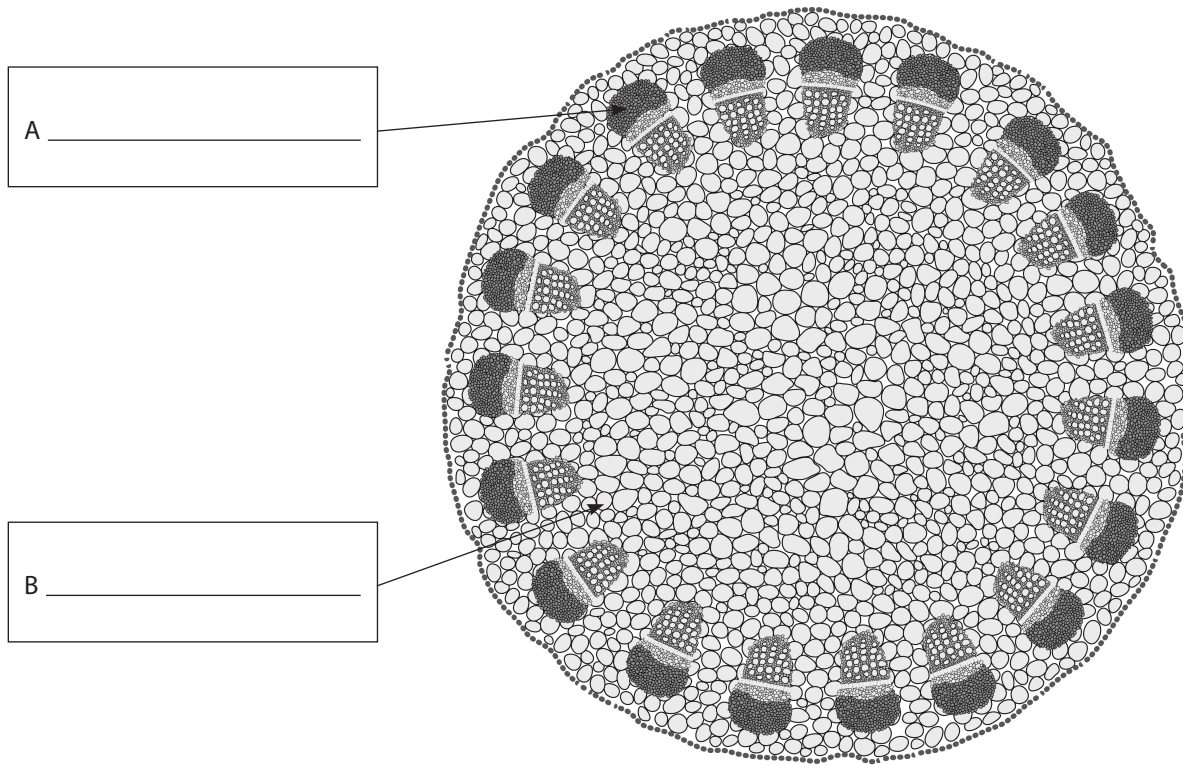


Figure 1

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

(2)

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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 .....



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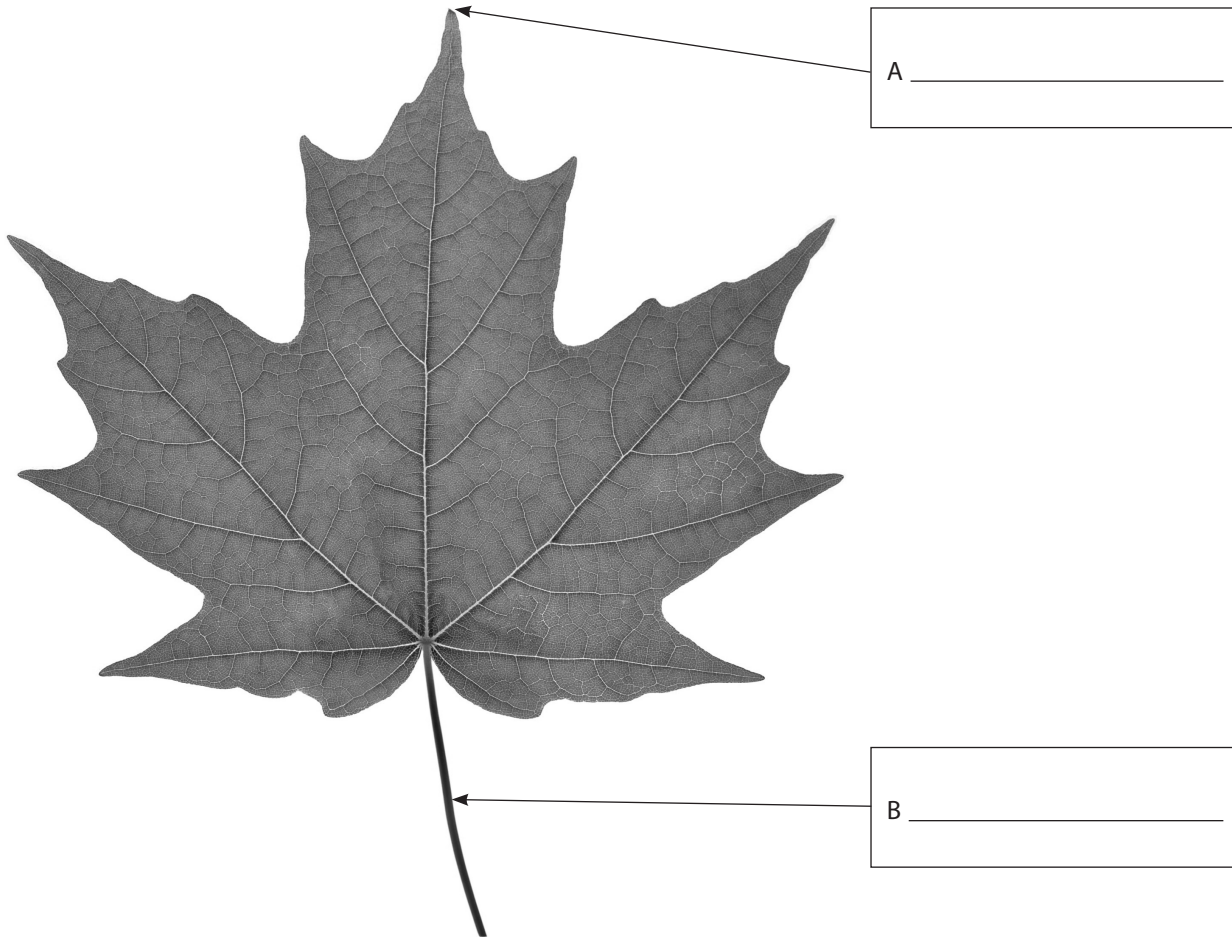
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**Question 2 is on the next page**



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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(c) Explain **two** factors affecting mineral absorption by plant roots.

(4)

1

2

(d) The weather during the spring has been cold, with a period of snow and frost.

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)







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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 .....

2 .....

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

(2)

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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)

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2 .....

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