

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 11 January 2021

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

1 Figure 1 shows a cross section of a flower.

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

(2)

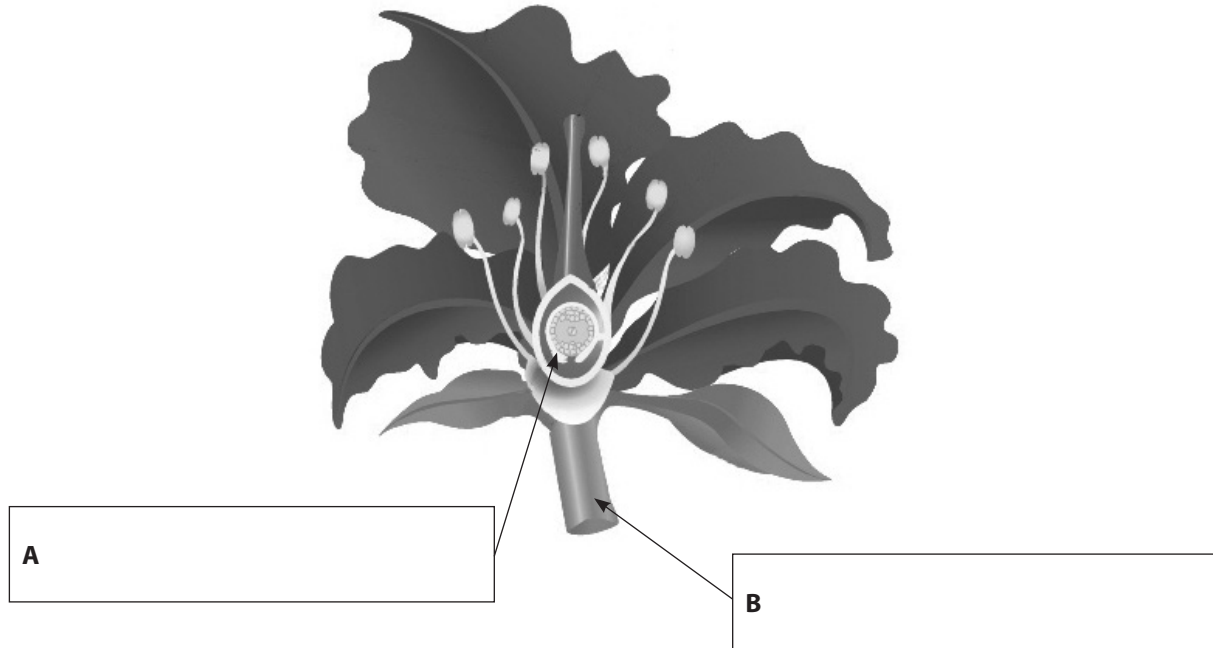


Figure 1

(b) Give **two** functions of the corolla in a flower.

(2)

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(c) State **two** ways dormancy can be caused in seeds.

(2)

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(d) Explain **two** features of an anemophilous flower.

(4)

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(e) Analyse how the climate conditions in spring improve the germination rate in many seeds.

(6)

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(Total for Question 1 = 16 marks)

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2 (a) Figure 2 shows part of the carbon cycle.

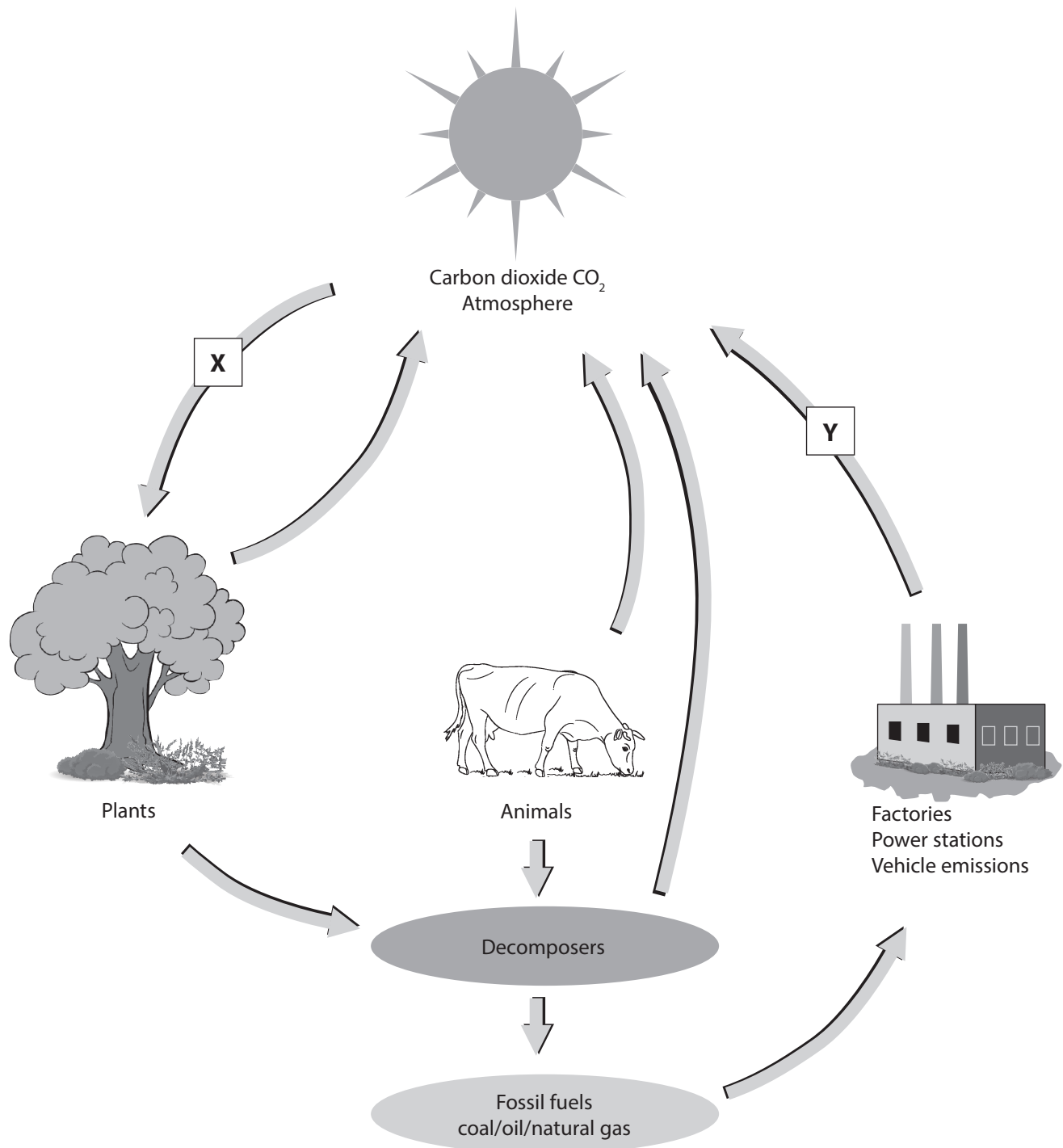


Figure 2

Identify processes **X** and **Y** in Figure 2.

(2)

X

Y

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(b) Describe the role of decomposers in the carbon cycle.

(4)

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(c) Explain **two** factors that will affect the rate of transpiration in a plant.

(4)

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4 The table below shows information about three methods of soil drainage.

(a) Complete the table by providing the missing information.

(2)

	Ease of method	Permanency of method	Risk of soil erosion
Change soil texture	Easy		Low
Construct sloping ground	Difficult	High	
Creation of watercourses/ditches	Medium	High	Medium

(b) State **two** methods that could be used to change soil texture.

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(c) Explain **one** way ditches and watercourses help increase the drainage of a soil.

(2)

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(d) Land-based industries often use large machinery.

Explain **two** ways that using large machinery will affect the choices of drainage system used.

(4)

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P 6 7 4 9 2 A 0 1 1 1 6

5 (a) State the meaning of the term 'organic fertiliser'.

(1)

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The table below shows information about three types of organic matter that may be used as a fertiliser.

	Physical state	% Nitrogen	% Phosphorus
Farmyard manure	Solid	0.70	0.30
Leaf mulch	Solid	0.80	0.35
Slurry	Liquid	0.25	0.15

(b) Give **one** reason a grower might use leaf mulch rather than the other fertilisers listed.

(1)

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(c) Describe **one** method of applying an inorganic fertiliser.

(2)

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(d) The table below records the effects and deficiency symptoms of two plant nutrients.
Complete the table by providing the missing information. (2)

Nutrient	Effect of nutrient	Deficiency symptoms
	Improved flower and fruit formation Increase in hardiness	Poor quality fruits/ seeds Leaf scorch in older leaves Leaves bronzed and rolled inwards
Molybdenum (Mo)	Increased uptake of nitrogen by roots. Increased root nodule activity	

(e) A soil may contain nutrients, but a plant may not be able to take up enough of these nutrients.
Explain **two** reasons why. (4)

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