

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

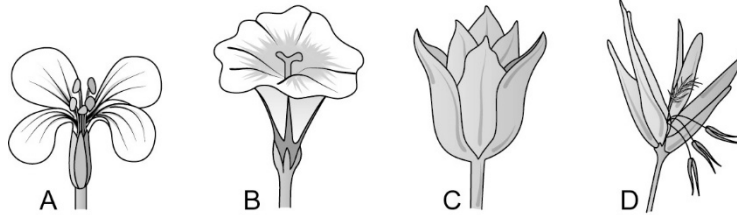
1 a Choose the correct word to complete the sentence about pollination. Tick *one* box.

Pollination is the transfer of \_\_\_\_\_ from the anthers to the stigma of a flower.

bees       nectar       pollen       seeds

(1 mark)

b The drawings show four flowers.



Which flower is most likely to be wind pollinated? Write *one* letter in the box.

(1 mark)

i Give a reason for your choice.

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(1 mark)

c Describe the difference between cross-pollination and self-pollination.

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(1 mark)

d Describe the sequence of events that occurs after pollination to allow the male gamete to reach the female gamete.

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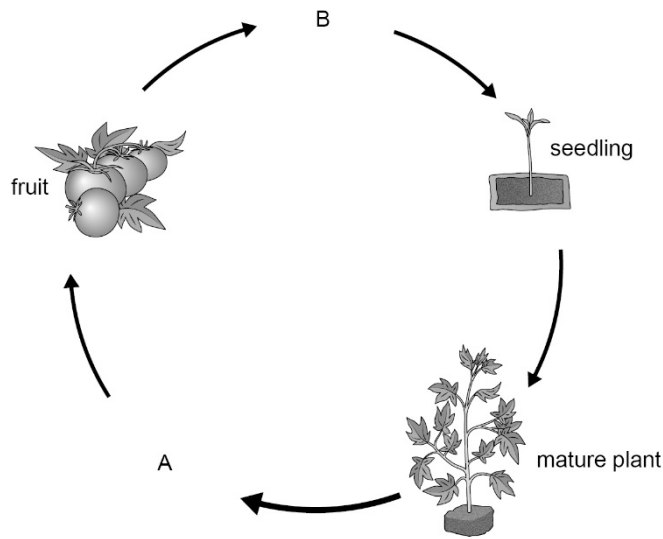
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(3 marks)

(Total for Question 1 = 7 marks)

2 a The diagram shows the life cycle of a tomato plant.



What happens at stages A and B? Tick *one* box for each stage.

i stage A:

- A Seeds germinate.
- B Seeds are dispersed.
- C Seeds are formed.
- D Seeds grow roots.

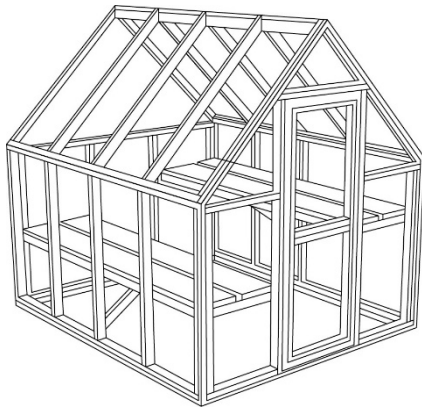
(1 mark)

ii stage B:

- A flowering
- B pollination
- C fertilisation
- D seed dispersal

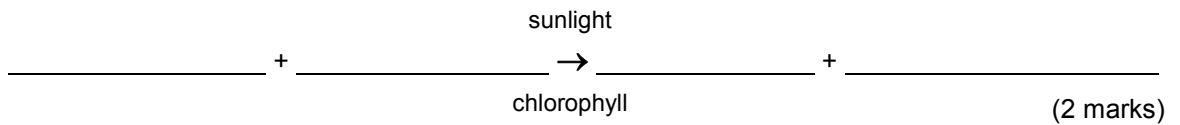
(1 mark)

**b** Tomato plants can be grown in a greenhouse.



The greenhouse is made of glass to allow lots of light in for photosynthesis.

**i** Write a word equation for photosynthesis.



**ii** State one other way that using a greenhouse helps tomato plants to grow well.

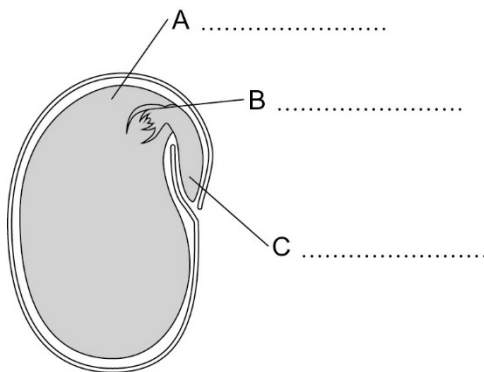
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\_\_\_\_\_

(1 mark)

(Total for Question 2 = 5 marks)

**3 a** The drawing shows the inside of a bean seed. Label parts A, B and C.



(3 marks)

- b** John measured the height of some bean seedlings every day for 14 days. Each day he worked out how much the height had increased. On day 7 he forgot to do this.

The results are shown in the table.

Day	Bean seedlings	
	Average height (mm)	Height increase (mm)
1	12	–
2	19	7
3	24	5
4	31	7
5	44	13
6	58	14
7	77	
8	94	17
9	116	22
10	124	8
11	133	9
12	140	7
13	143	3
14	143	0

- i** Calculate the height increase for day 7.

\_\_\_\_\_

(1 mark)

- ii** Describe how the height increase of the beans changed between day 1 and day 14.

\_\_\_\_\_

\_\_\_\_\_

(1 mark)

- c** The energy for growth comes from respiration.

Write a word equation for aerobic respiration.

\_\_\_\_\_ + \_\_\_\_\_ → \_\_\_\_\_ + \_\_\_\_\_

(2 marks)

(Total for Question 3 = 7 marks)

**4 a i** Complete the sentences by writing *one* word in each space.

A balanced diet is one that contains the correct amounts of carbohydrates,

\_\_\_\_\_ and \_\_\_\_\_ with vitamins, minerals, water and fibre.

(2 marks)

**ii** Which word *best* describes the component of our diet that helps food move along the gut?  
Tick *one* box.

A carbohydrate

B vitamins

C minerals

D fibre

(1 mark)

**b i** Explain the difference between starvation and malnutrition.

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(2 marks)

**ii** Give *one* example of a deficiency disease and its cause.

Deficiency disease \_\_\_\_\_

This is caused by \_\_\_\_\_

(2 marks)

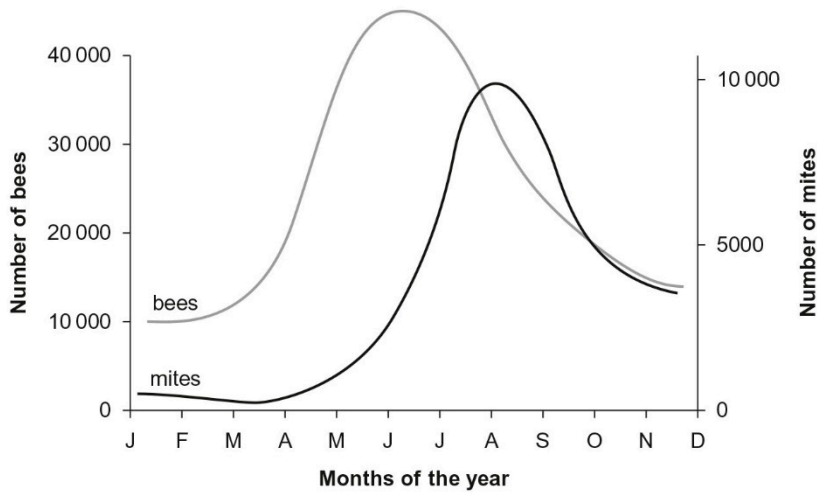
(Total for Question 4 = 7 marks)

- 5 a** The varroa mite (*Varroa destructor*) is a tiny animal that attacks bees. It feeds on the bee's body fluids. The mites can cause the death of many bees. Which word shows the species of this tiny animal? Tick *one* box.

- A varroa                       B *destructor*
- C mite                               D *Varroa*

(1 mark)

- b** The graph shows the changes in number of bees and number of mites in one year.



- i** In which month are there most bees? Tick *one* box.

- A June
- B July
- C August
- D September

(1 mark)

- ii** Describe the growth curve for mites from January to August.

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(2 marks)

iii Suggest an explanation for why the number of mites decreases from August to December.

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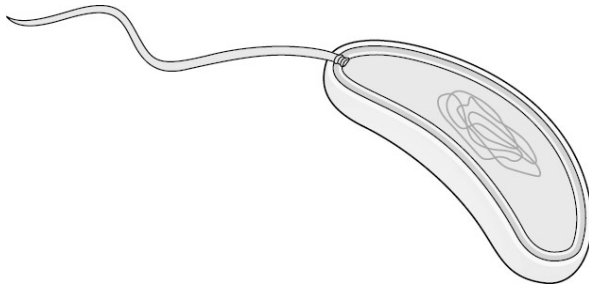
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(2 marks)

(Total for Question 5 = 6 marks)

6 a The diagram below shows one type of microorganism.



i What type of microorganism is shown in the diagram? Tick *one* box.

- A bacterium
- B virus
- C protoctist
- D yeast

(1 mark)

ii Describe how this microorganism moves.

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(2 marks)

**b** Microorganisms like the one in the drawing can be found in food.

Explain why food lasts longer when it is kept in a refrigerator.

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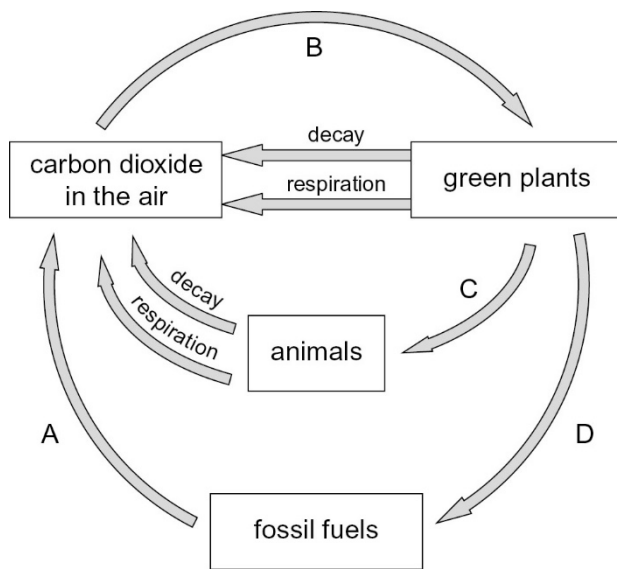


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(2 marks)

(Total for Question 6 = 5 marks)

**7 a** The diagram is a model of how carbon is recycled.



Which letter (A, B, C or D) shows:

i combustion?

(1 mark)

ii photosynthesis?

(1 mark)

**b** Explain how dead animals and plants are decayed.

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(3 marks)

(Total for Question 7 = 5 marks)



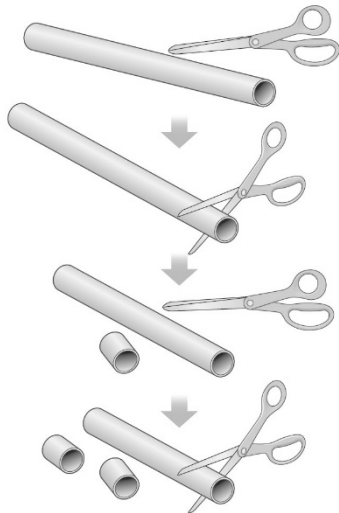
8 a The table contains names and descriptions of processes in the digestive system.

Complete the table by filling in the missing names and descriptions.

Name of process	Description of process
	food enters the mouth
digestion	
	small food molecules move from the small intestine into the blood
	removal of undigested food

(4 marks)

b The diagram shows the scissors model of how enzymes work.



Use the diagram to help you explain what an enzyme is and what enzymes do.

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(3 marks)

(Total for Question 8 = 7 marks)

9 Four of the five kingdoms used for classification are shown below.

The characteristics of all five kingdoms are also shown below, although not in the same order as the list of kingdoms.

Kingdom	Characteristics
animals	cell walls made of cellulose make their own food
	mostly unicellular
protocists	no cell walls feed on other organisms
plants	cell walls contain chitin live on dead organisms
prokaryotes	unicellular cells have no nucleus

a Write the missing kingdom in the empty box.

(1 mark)

b Draw one line from each kingdom to match it to the characteristics of the organisms classified in it.

(2 marks)

(Total for Question 9 = 3 marks)

**10 a** State two differences in the composition of exhaled air and inhaled air.

1 \_\_\_\_\_

2 \_\_\_\_\_

(2 marks)

**b** Explain how oxygen that enters the lungs reaches the body cells that need it.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(3 marks)

**c** Explain how specialised cells in the trachea (windpipe) keep the lungs clean.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(3 marks)

(Total for Question 10 = 8 marks)

**TOTAL FOR TEST = 60 MARKS**