



General Certificate of Secondary Education
2024

Centre Number

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Candidate Number

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Biology

Unit 1

Foundation Tier

MV24

[GBL11]

FRIDAY 17 MAY, MORNING

Time

1 hour 15 minutes, plus your additional time allowance.

Instructions to Candidates

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided.

Do not write on blank pages.

Complete in black ink only.

Answer **all eleven** questions.

Information for Candidates

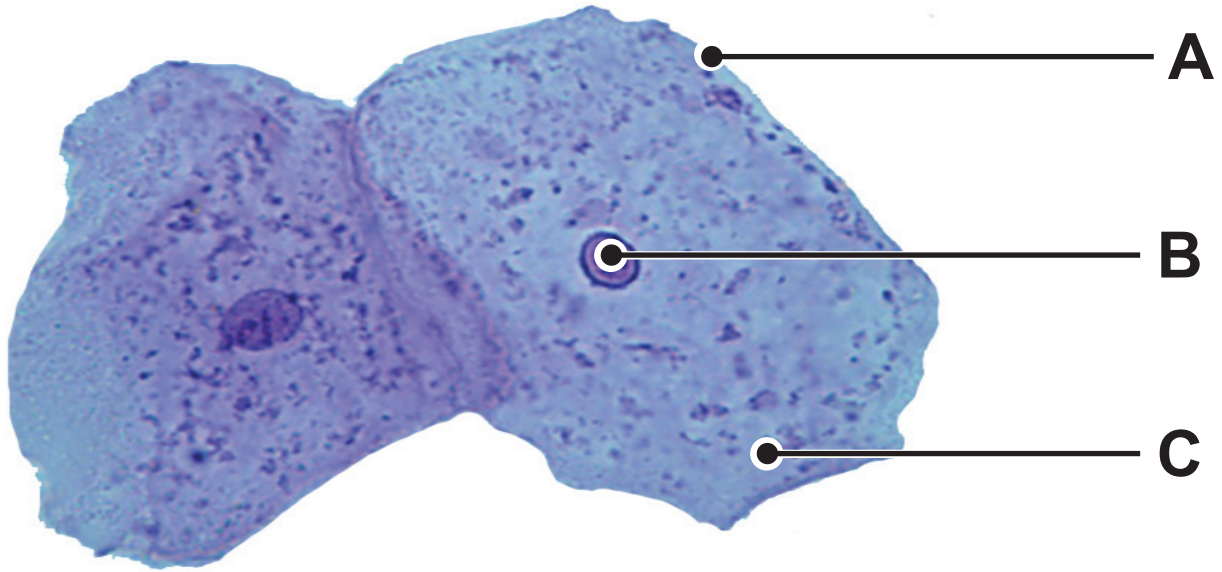
The total mark for this paper is **75**.

Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Question **7(b)**.

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(Questions start overleaf)

1 The photograph shows two cheek cells viewed under a light microscope.



Look at the photograph.

(a) Name and give the function of parts **A**, **B** and **C**. [6 marks]

A Name _____
Function _____

B Name _____
Function _____

C Name _____

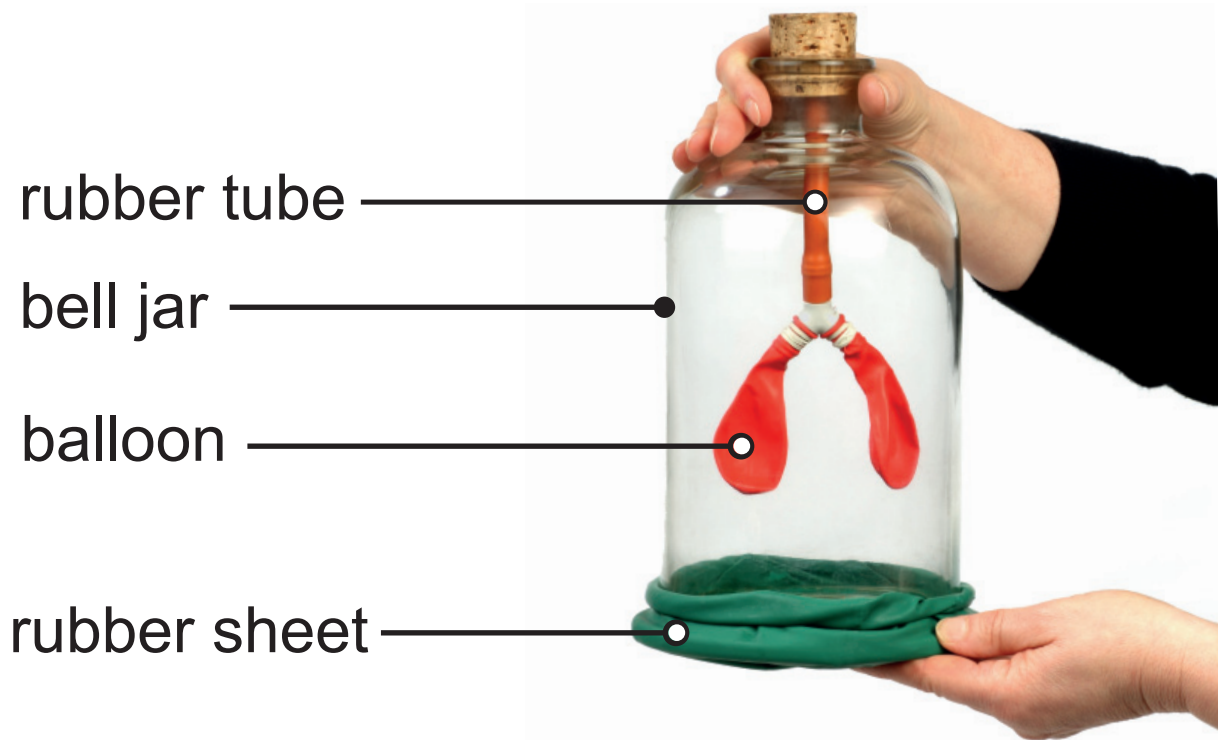
Function _____

(b) Give **one** structure found in plant cells which is **not** found in animal cells.

[1 mark]

2 Photographs **A** and **B** show a model of the respiratory system being used to demonstrate breathing.

A



B



Look at the photographs.

(a) Name the parts of the respiratory system represented by the [3 marks]

bell jar. _____

balloon. _____

rubber sheet. _____

Photograph B demonstrates **breathing in**.

(b) Give **two** pieces of evidence which show this. [2 marks]

1. _____

2. _____

3 (a) Proteins are large biological molecules.

(i) Name the smaller molecules which make up proteins. [1 mark]

(ii) Give **one** function of proteins in the body. [1 mark]

(b) Samples of food can be tested for protein.

(i) Name the reagent used to test a sample of food for protein. [1 mark]

Circle the correct answer.

Benedict's

Biuret

Iodine solution

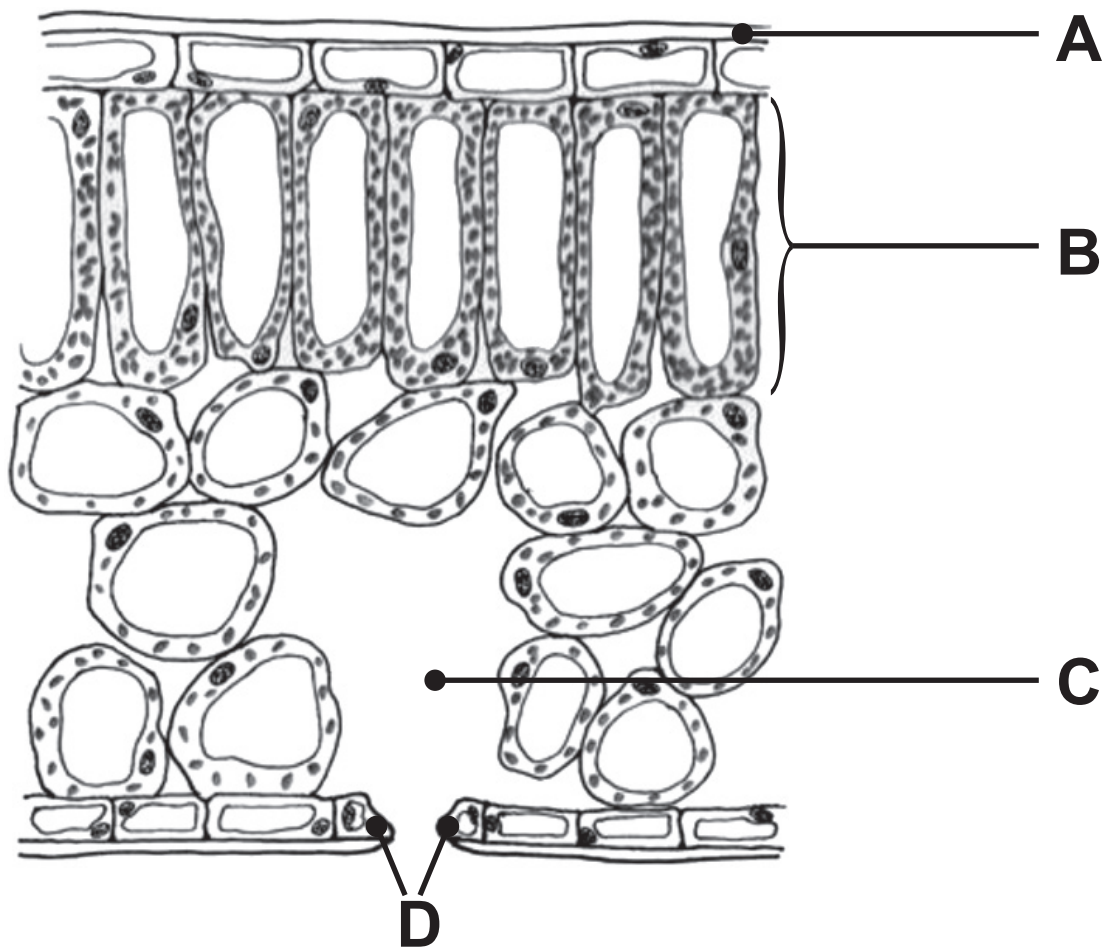
(ii) Give the colour change in the reagent which shows that protein is present.
[2 marks]

From _____
to _____

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(Questions continue overleaf)

4 The diagram shows a section through a leaf.



Look at the diagram.

Use the diagram to help you complete the table. [6 marks]

Part of a leaf	Label	Function
palisade mesophyll		contains tightly packed cells with many chloroplasts
air space		
	D	control opening and closing of stomata
waxy cuticle		

5 Stem cells are found in animals and plants.

(a) What are stem cells? [2 marks]

(b) Give **two** sources of stem cells in animals. [2 marks]

1. _____

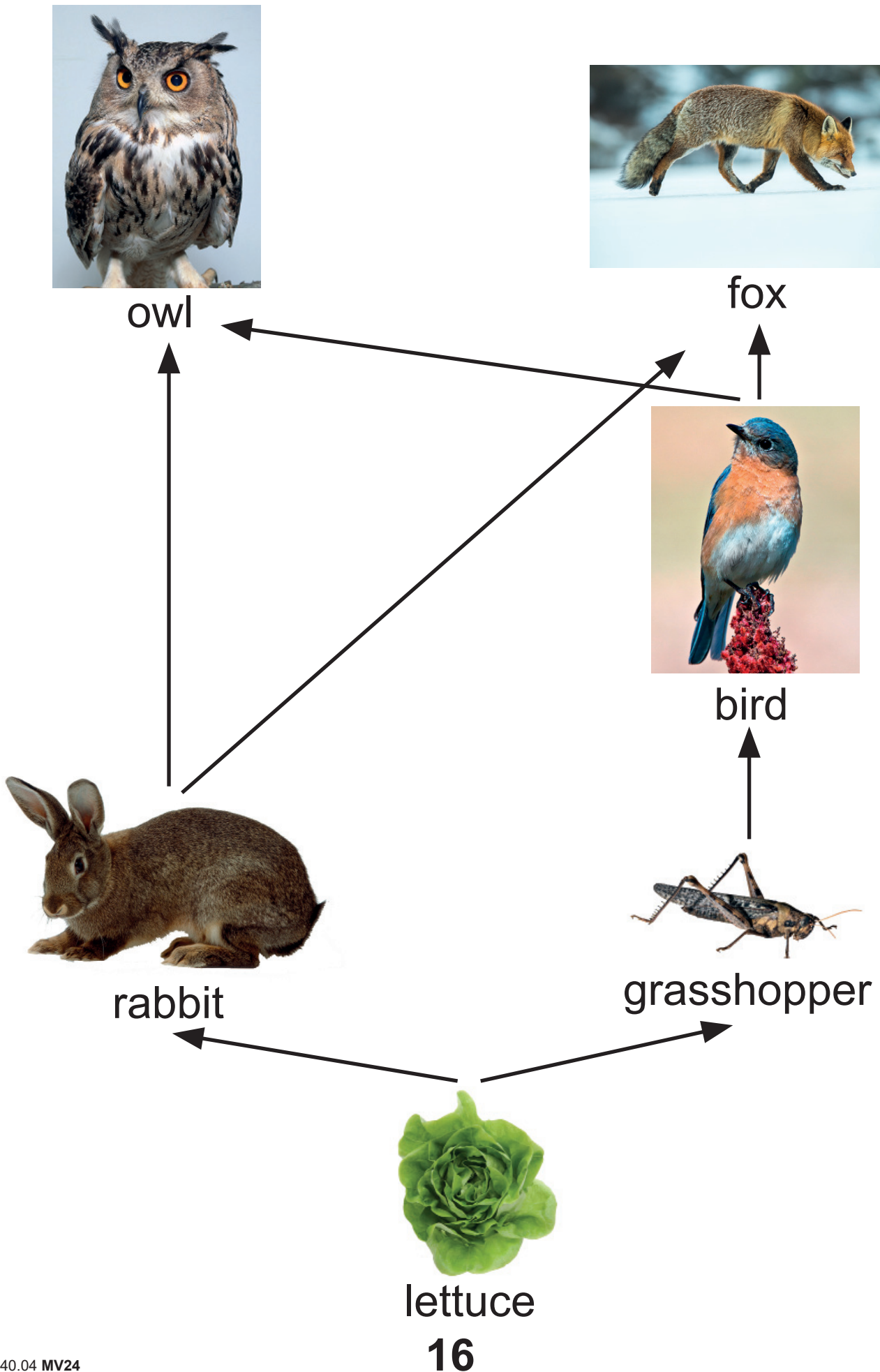
2. _____

(c) Name the growing points of plants which produce stem cells. [1 mark]

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(Questions continue overleaf)

6 The diagram shows part of a food web.



Look at the food web.

(a) What is the source of energy for this food web? [1 mark]

(b) (i) Name a primary consumer from this food web. [1 mark]

(ii) Name an organism from this food web that feeds at **two** trophic levels. [1 mark]

(c) Use information from this food web to **complete the food chain.** [2 marks]

lettuce

owl

(d) The diagram shows the energy flow through another food chain from this food web.



(i) Calculate the percentage of the energy in the lettuce which is passed on to the rabbit. [3 marks]

Show your working.

_____ %

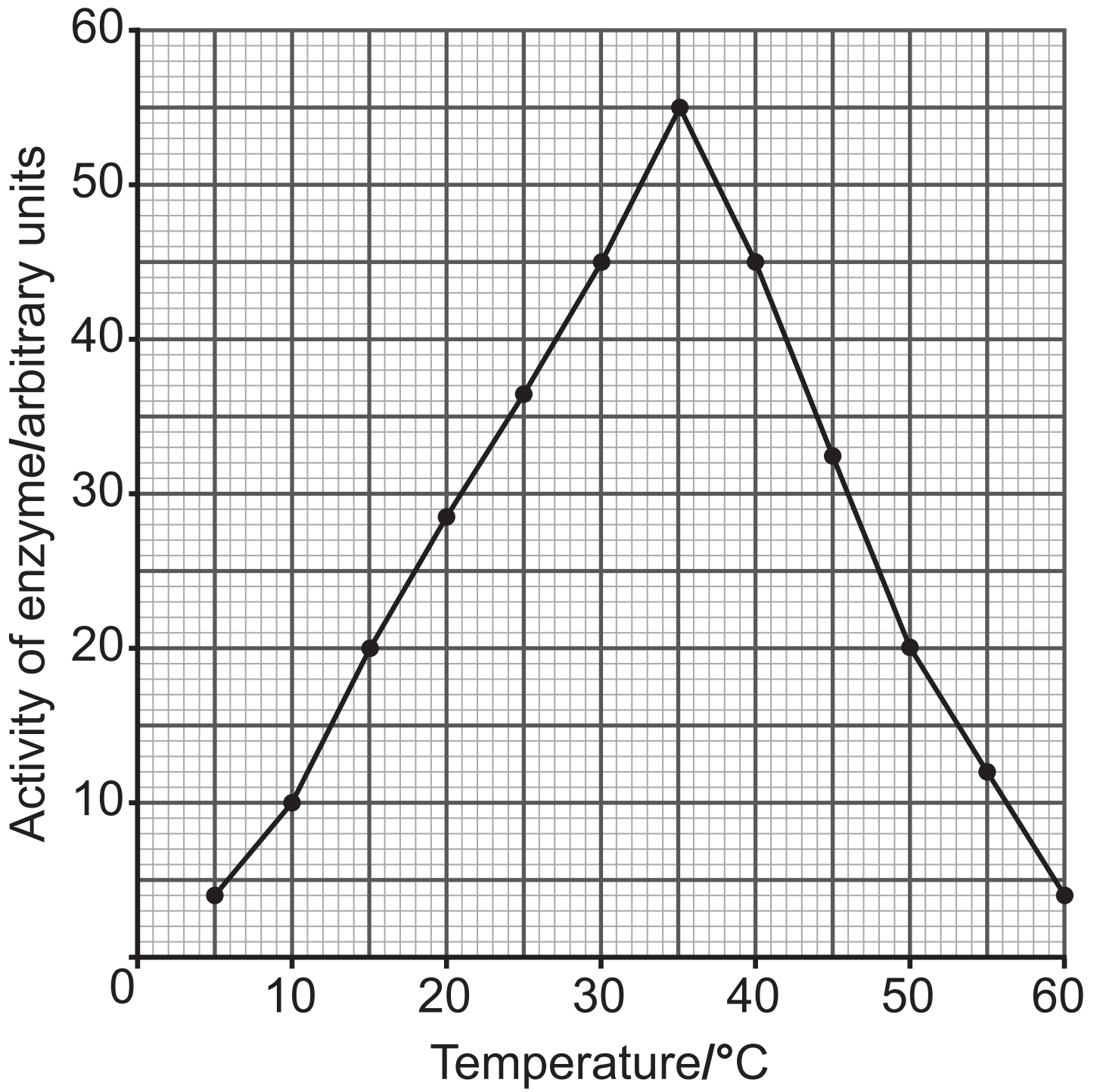
(ii) Give **one** way energy is lost between the lettuce and the rabbit. [1 mark]

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7 (a) What is an enzyme? [2 marks]

A group of students carried out an experiment to show the effect of temperature on the activity of an enzyme.

The graph on page 22 shows their results.



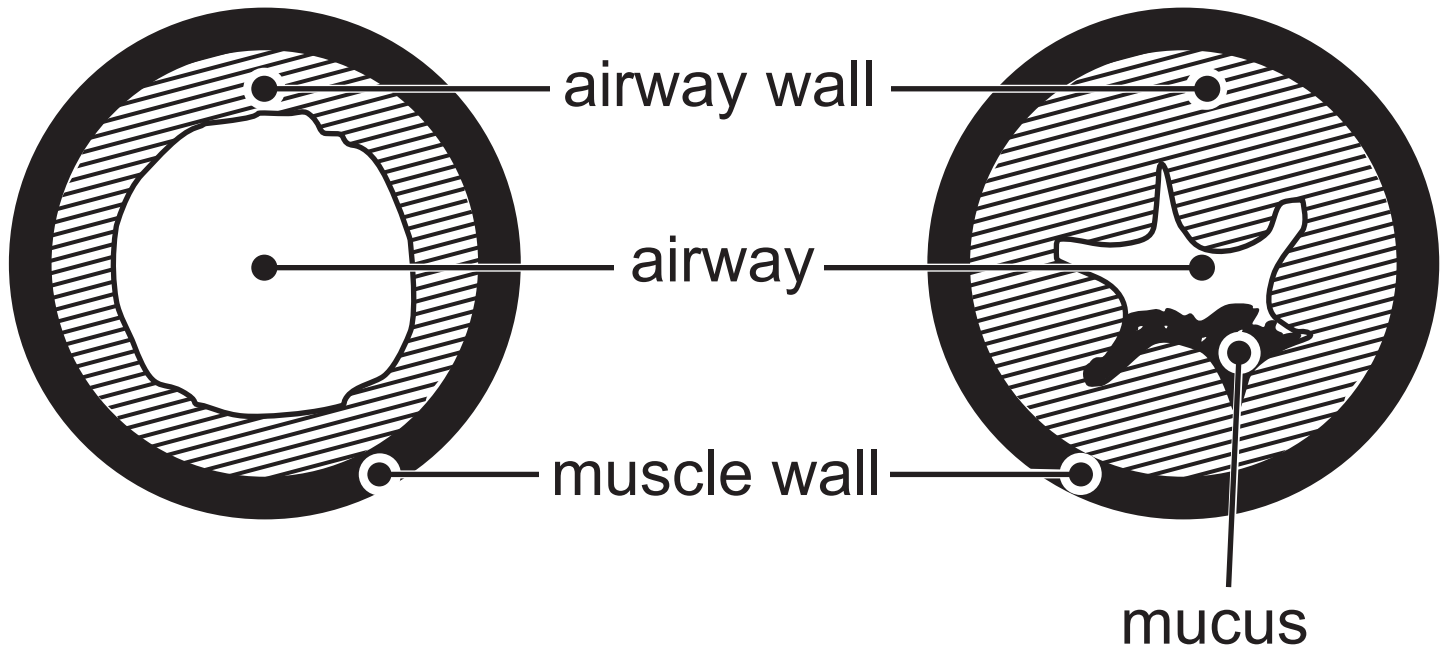
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(Questions continue overleaf)

8 The diagrams show a bronchiole from a healthy person and a bronchiole from a person with asthma (asthmatic bronchiole).

**healthy
bronchiole**

**asthmatic
bronchiole**



Look at the diagrams.

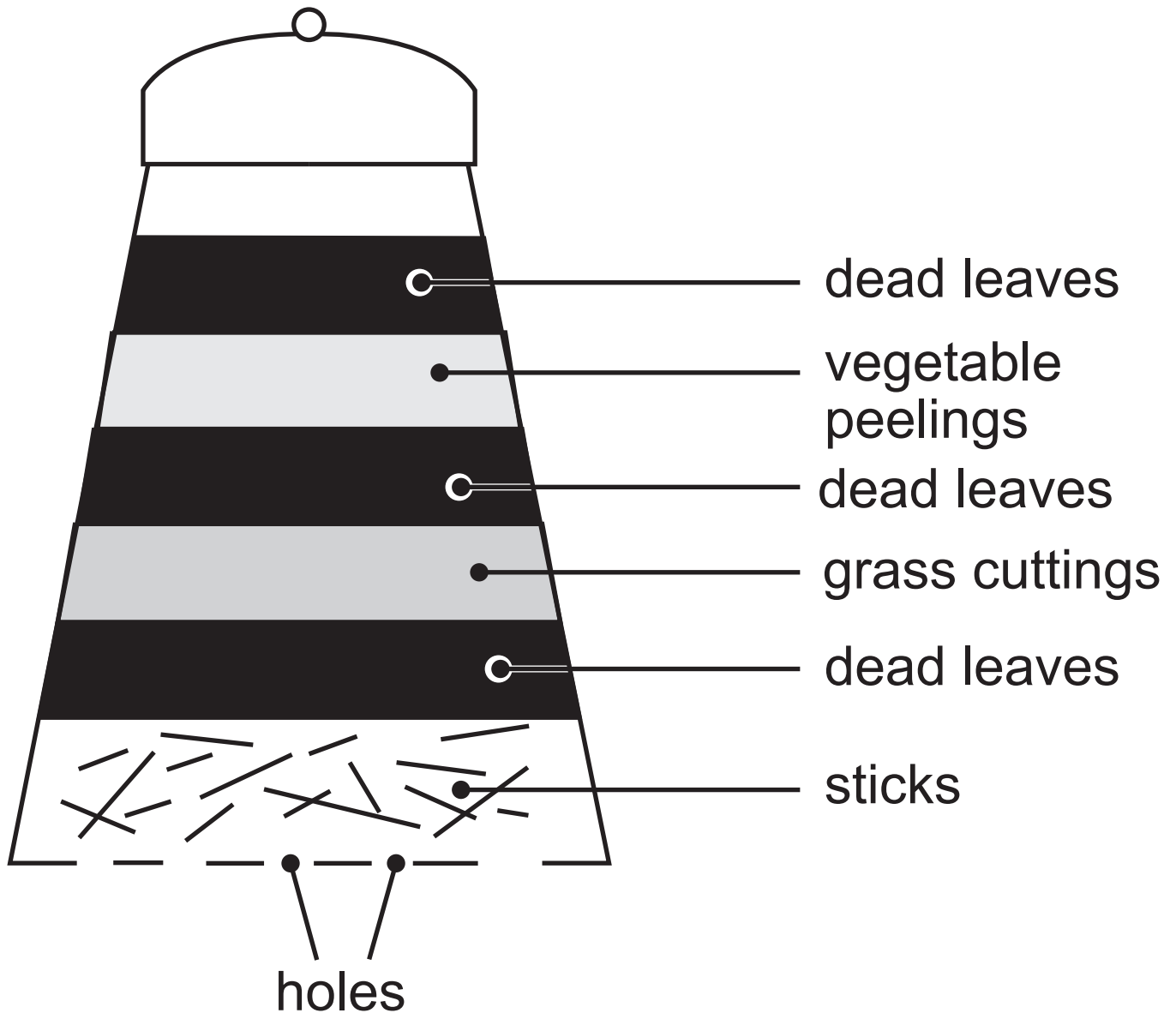
(a) Give **two** differences between the healthy bronchiole and the asthmatic bronchiole. [2 marks]

1. _____

2. _____

(b) Suggest and explain what effect these differences may have on gas exchange.
[2 marks]

9 (a) The diagram shows dead plant material in a compost bin.



Dead plant material is broken down physically and chemically by organisms in a compost bin.

In **physical** breakdown, some organisms grind up the dead plant material into small pieces.

In **chemical** breakdown, saprophytic organisms decompose the dead plant material.

Look at the diagram.

(i) Name **two** types of saprophytic organisms. [2 marks]

1. _____

2. _____

(ii) Describe how saprophytic organisms break down dead plant material. [3 marks]

Decomposition is much faster if the dead plant material is physically broken down before the chemical breakdown starts.

(iii) Suggest why. [2 marks]

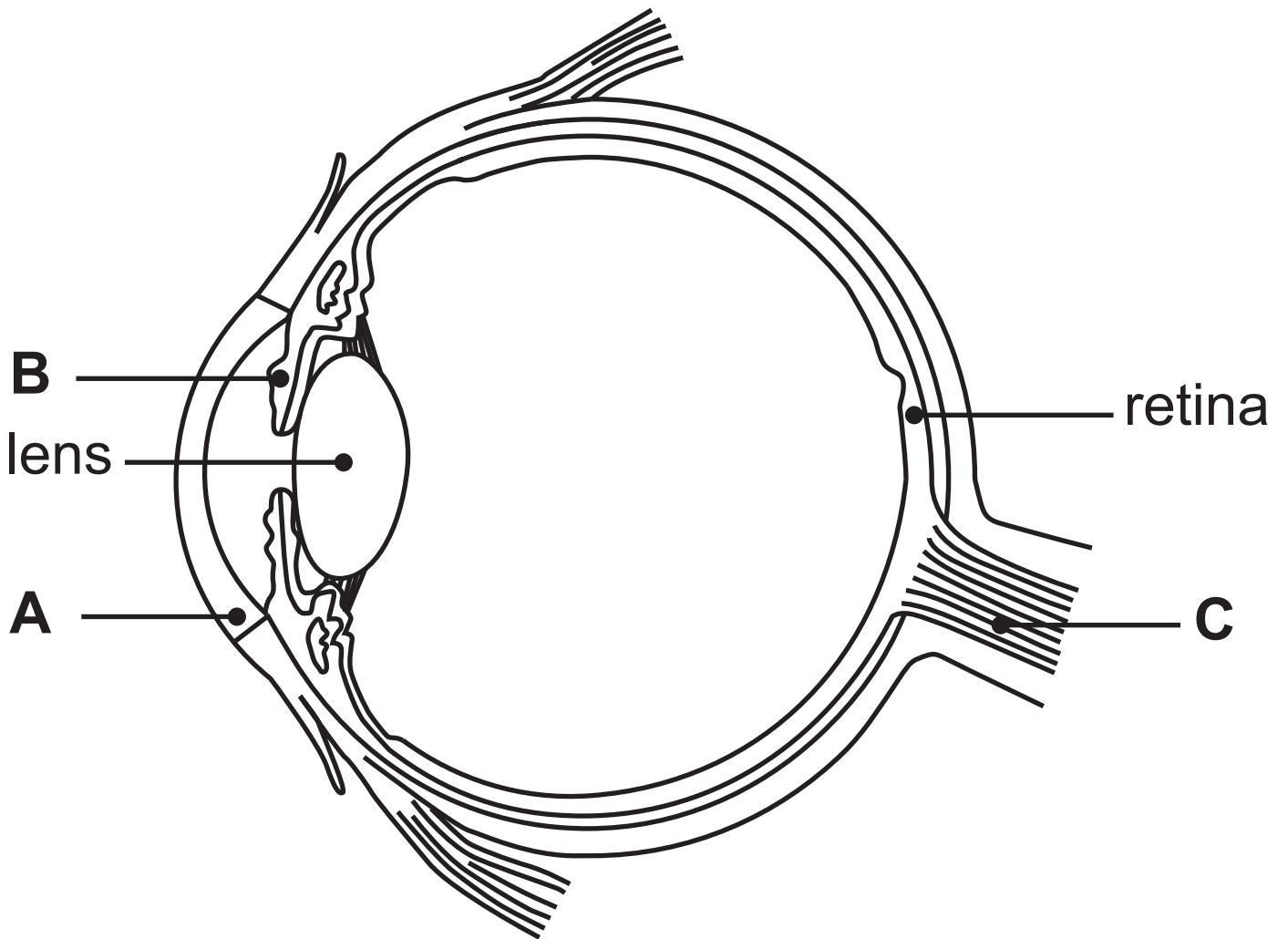
(b) Suggest how holes and sticks in the bottom of the compost bin help speed up decomposition. [1 mark]

(c) What name is given to the decomposed plant material in the soil? [1 mark]

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(Questions continue overleaf)

10 The diagram shows a section through an eye.



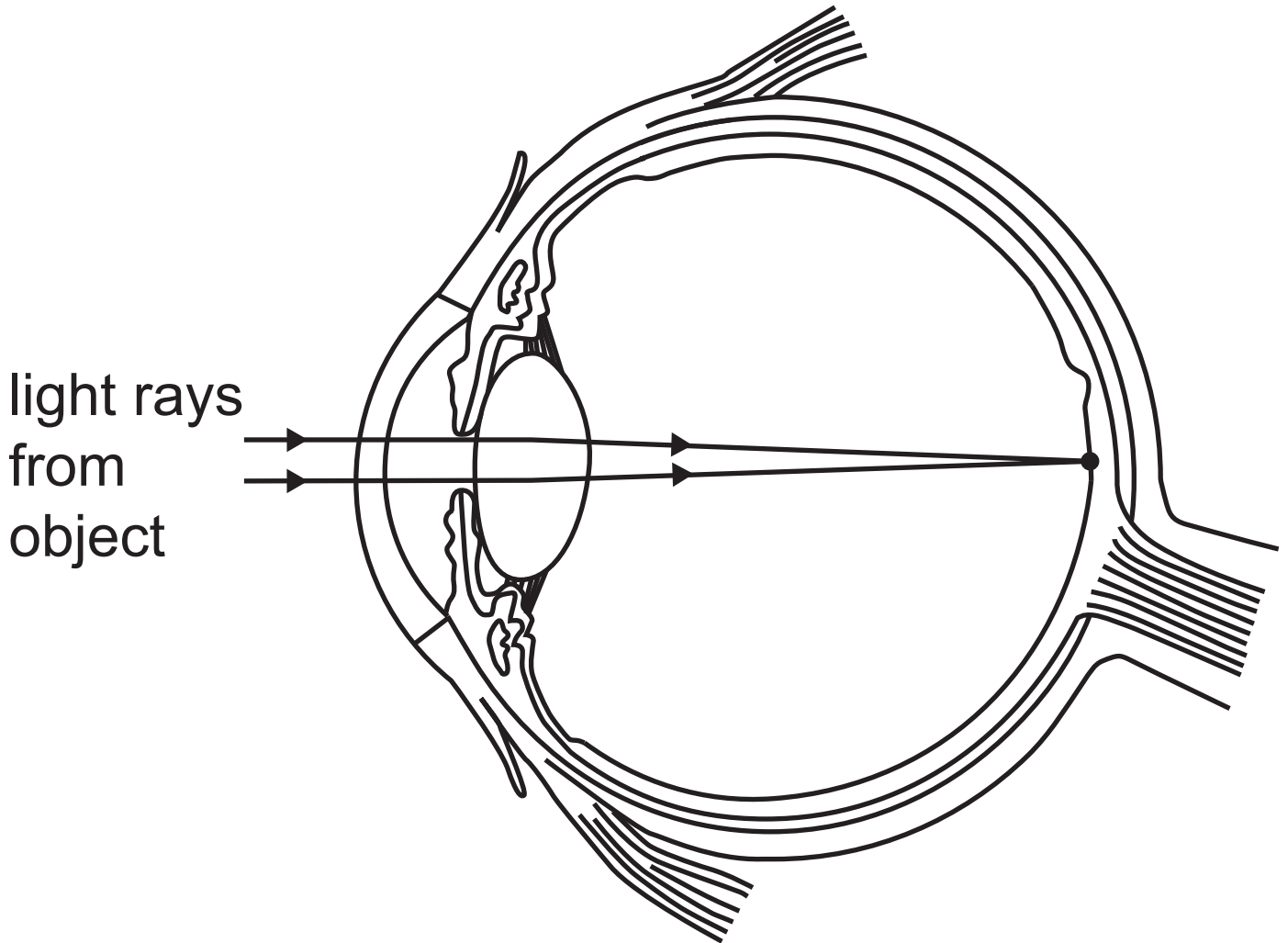
(a) Name parts **A**, **B** and **C**. [3 marks]

A _____

B _____

C _____

The diagram shows light rays from an object entering the eye through the pupil.



(b) Use the diagram to explain how we see an image of an object. [4 marks]

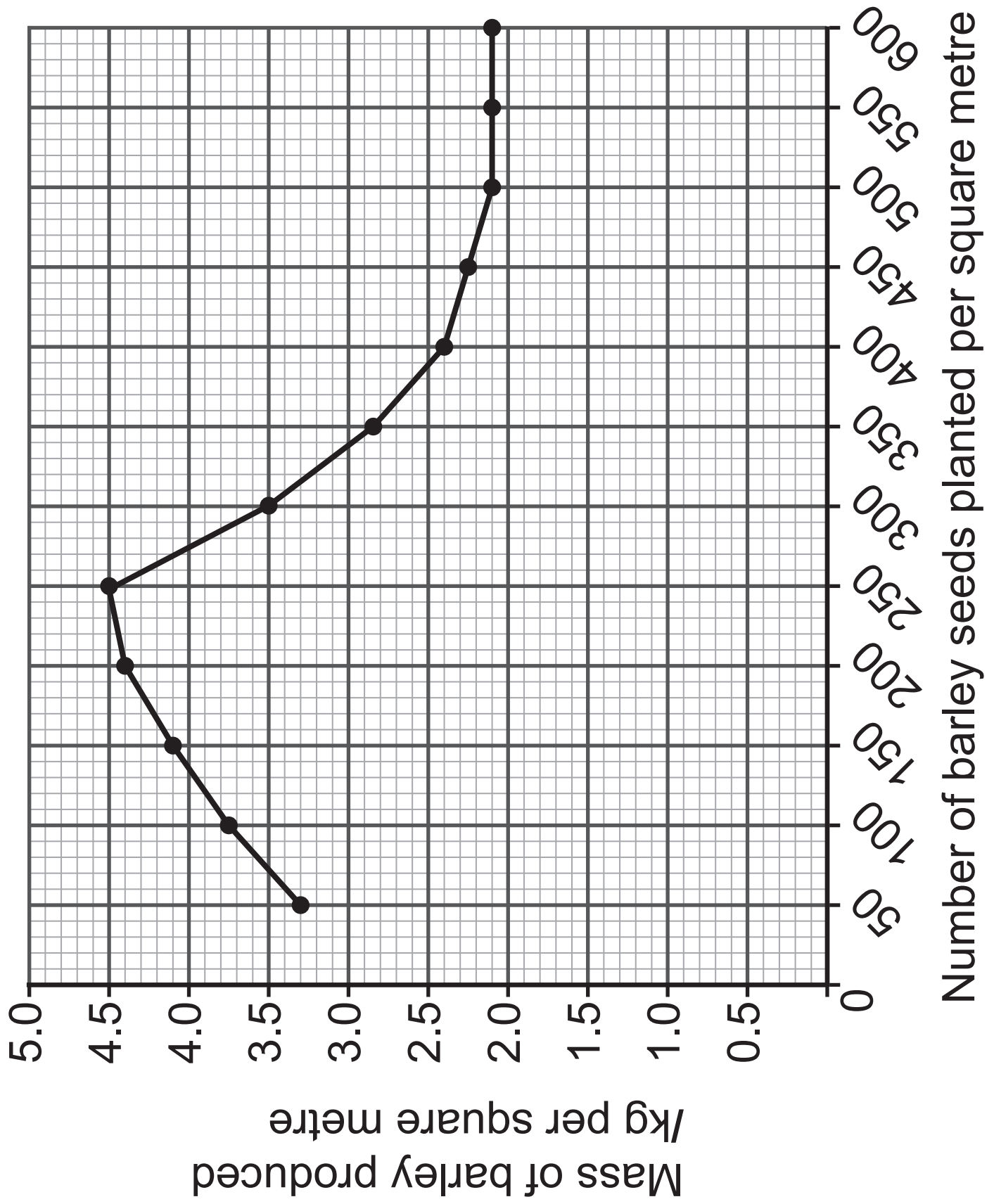
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11 Scientists carried out an investigation into the mass of barley produced when different numbers of barley seeds were planted in test plots.

The scientists planted different numbers of barley seeds per square metre in these test plots.

They recorded the mass of barley produced in each test plot after six weeks.

The graph on page 36 shows their results.



(a) Describe the trend shown by the results.
[4 marks]

Use **data** to support your answer.

(b) When the number of barley seeds planted per square metre was large, competition between the barley plants increased.

One resource the barley plants compete for is light.

(i) Suggest how competition for light caused the changes shown in the graph when more than 300 barley seeds were planted per square metre. [2 marks]

(ii) Give **two** other resources the barley plants compete for. [2 marks]

1. _____

2. _____

**This is the end of the
question paper**

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Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
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10	
11	

Total Marks	
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Examiner Number

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