

Answer **all** questions in the spaces provided.

1 Complete the table to show which part of the blood carries out each function.

Choose your answers from the list.

plasma

platelet

red blood cell

white blood cell

The first answer has been done for you.

Function	Part of the blood
Transports most of the carbon dioxide	<i>plasma</i>
Transports most of the oxygen	
Helps blood to clot at a wound	
Defends the body against microorganisms	
Transports the products of digestion	

(4 marks)

4

2 Bread contains starch, protein and fat.

(a) Complete each sentence by choosing the correct words from the box.

amino acids	protein
fat	starch
fatty acids	sugar

Amylase speeds up the digestion of The product of this digestion is Protease speeds up the digestion of The product of this digestion is

(4 marks)

(b) Why do molecules of starch, protein and fat need to be digested?

.....

(2 marks)

(c) In which part of the digestive system does the digestion of starch begin? Draw a ring around your answer.

large intestine **mouth** **small intestine** **stomach**

(1 mark)

(d) What do we call substances like amylase and protease which speed up chemical reactions?

.....

(1 mark)

8

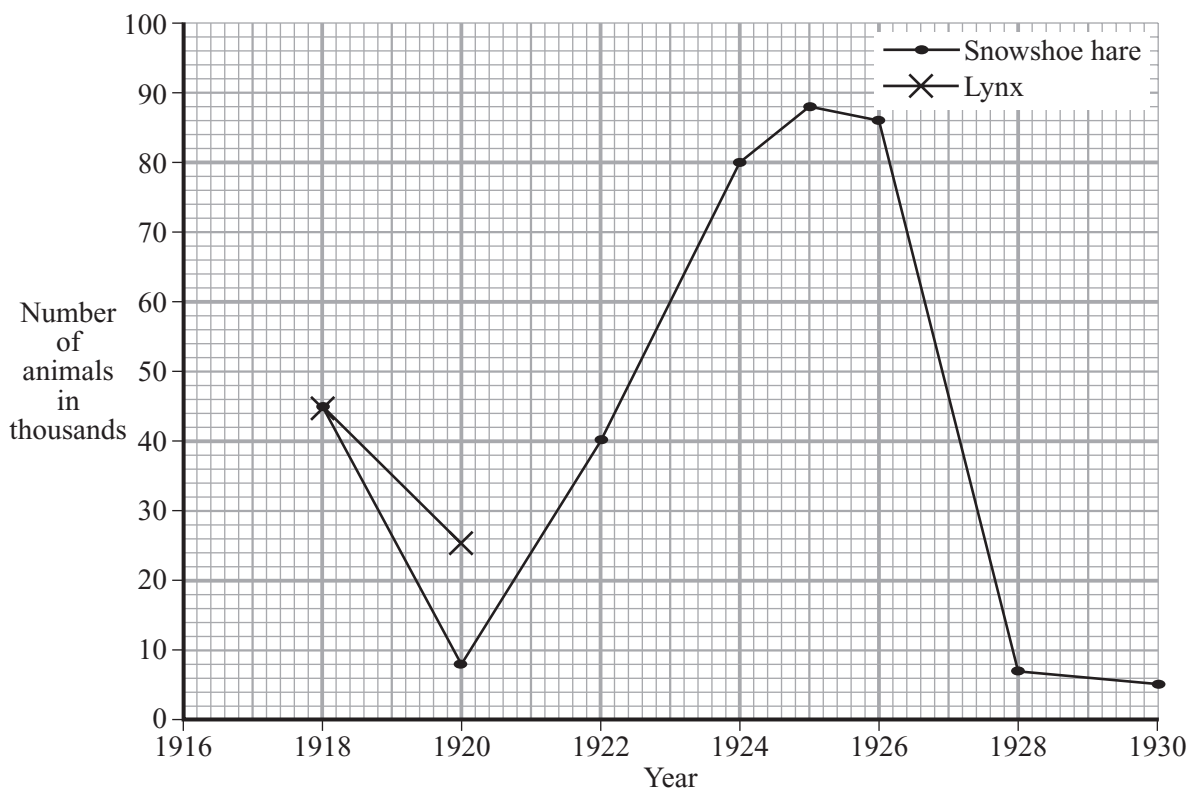
TURN OVER FOR THE NEXT QUESTION

Turn over ►

- 3 The lynx is a wild cat which lives in Canada. The table shows the number of lynx trapped in a part of Canada in certain years.

Year	Number of lynx in thousands
1918	45
1920	25
1922	10
1924	20
1926	40
1928	50

The snowshoe hare is another wild animal found in Canada. The graph shows the number of snowshoe hares trapped in the same years. The lynx eats the snowshoe hare.



- (a) Draw a graph of the data in the table. The first two points have been plotted for you.

(2 marks)

(b) From your graph, predict how many lynx were trapped in 1925.

..... thousand
(1 mark)

(c) Use the information to answer the following.

(i) What would you expect to happen to the number of lynx trapped in 1930? Draw a ring around your answer.

rise **fall** **stay the same**

(1 mark)

(ii) Give a reason for your answer to part (c) (i).

.....
.....
(1 mark)

(d) The lynx is a predator. What is a predator?

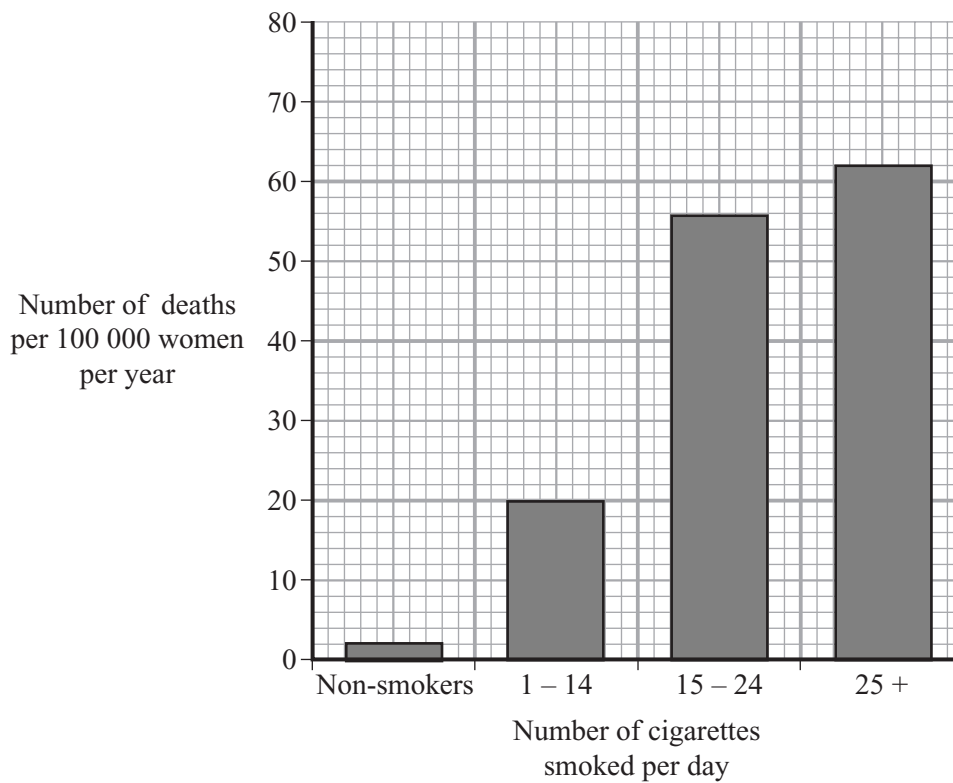
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(1 mark)

6

TURN OVER FOR THE NEXT QUESTION

Turn over ►

- 4 The bar graph shows how cigarette smoking affects the number of deaths from bronchitis and emphysema in women.



- (a) (i) Of the women who smoke 25+ cigarettes per day, how many die each year from bronchitis and emphysema?

.....per 100 000.
(1 mark)

- (ii) The death rate for women who smoke 25+ cigarettes per day is higher than the death rate for non-smokers. How much higher is it?

.....per 100 000.
(1 mark)

- (b) Name **one** other disease caused by cigarette smoking.

.....
(1 mark)

(c) Tobacco smoke contains carbon monoxide.

- (i) What effect does carbon monoxide have on the amount of oxygen that can be carried by the blood?

.....
(1 mark)

- (ii) What effect does cigarette smoking by pregnant women have on the average birth mass of their babies?

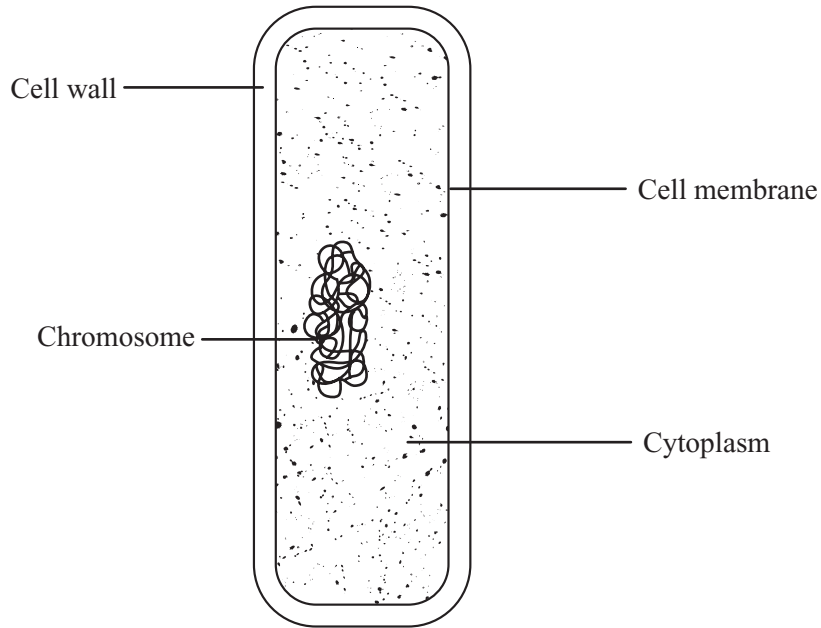
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(1 mark)

5

TURN OVER FOR THE NEXT QUESTION

Turn over ►

5 (a) The diagram shows a bacterial cell.



A bacterial cell is smaller than a human cell. Give **two** other ways in which the bacterial cell is different from a cell in the human body.

- 1
- 2 (2 marks)

(b) Describe and explain **two** natural defences which help to prevent bacteria entering and harming the human body.

- 1
-
- 2
- (2 marks)

- (c) The table shows changes in resistance to the antibiotic penicillin in one species of bacterium between 1991 and 1996.

Years	Percentage of cases where bacteria were resistant to penicillin
1991–92	7
1993–94	14
1995–96	22

A doctor was asked to treat a patient who had a sore throat.

- (i) How does penicillin help to treat infection?

.....
(1 mark)

- (ii) Use the data in the table to suggest why the doctor should **not** prescribe penicillin.

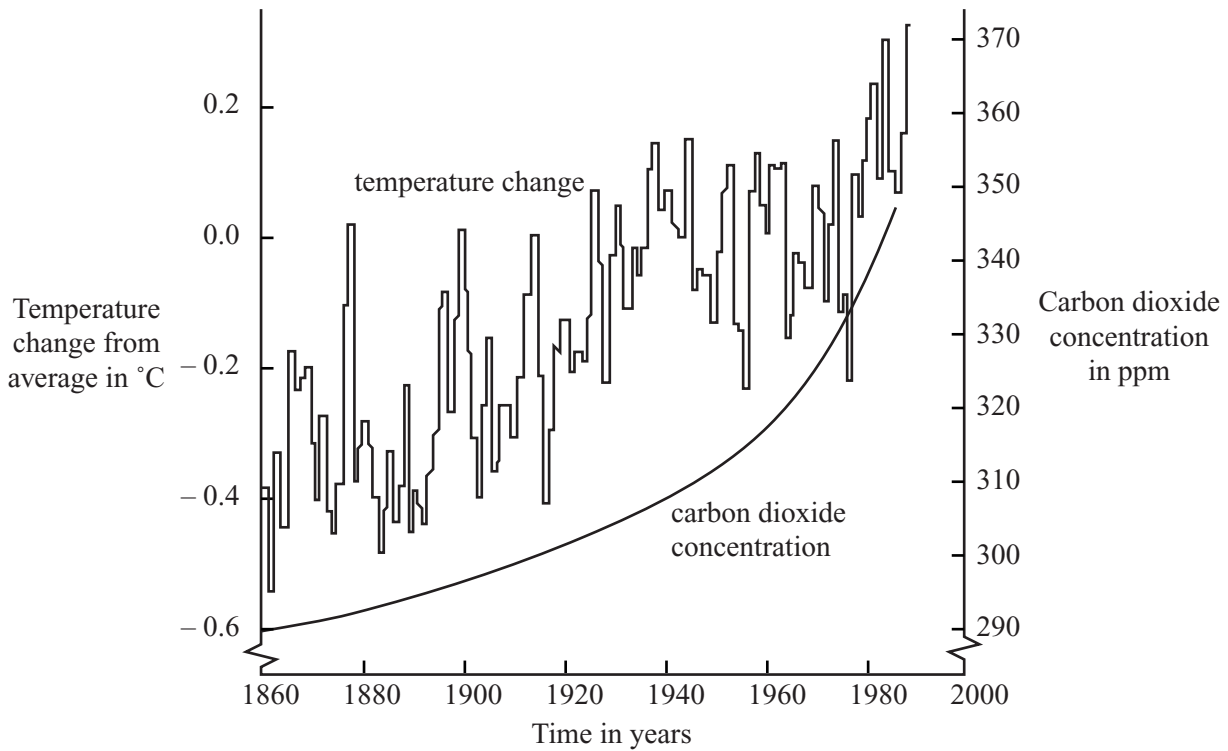
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(2 marks)

7

TURN OVER FOR THE NEXT QUESTION

Turn over ►

6 The graph shows changes in temperature and in carbon dioxide concentration in the earth's atmosphere between 1860 and 1990.



(a) Give **two** human activities which may have helped to increase the concentration of carbon dioxide in the atmosphere.

1

2

(2 marks)

(b) (i) Describe the changes in temperature shown by the graph between 1860 and 1990.

.....

(2 marks)

(ii) Do the data in the graph prove that increased carbon dioxide concentrations in the atmosphere caused the changes in temperature you described in part (b) (i)? Give a reason for your answer.

.....

(1 mark)

- (c) Describe **one** way in which a change in temperature such as that shown in the graph might affect the environment.

.....

.....

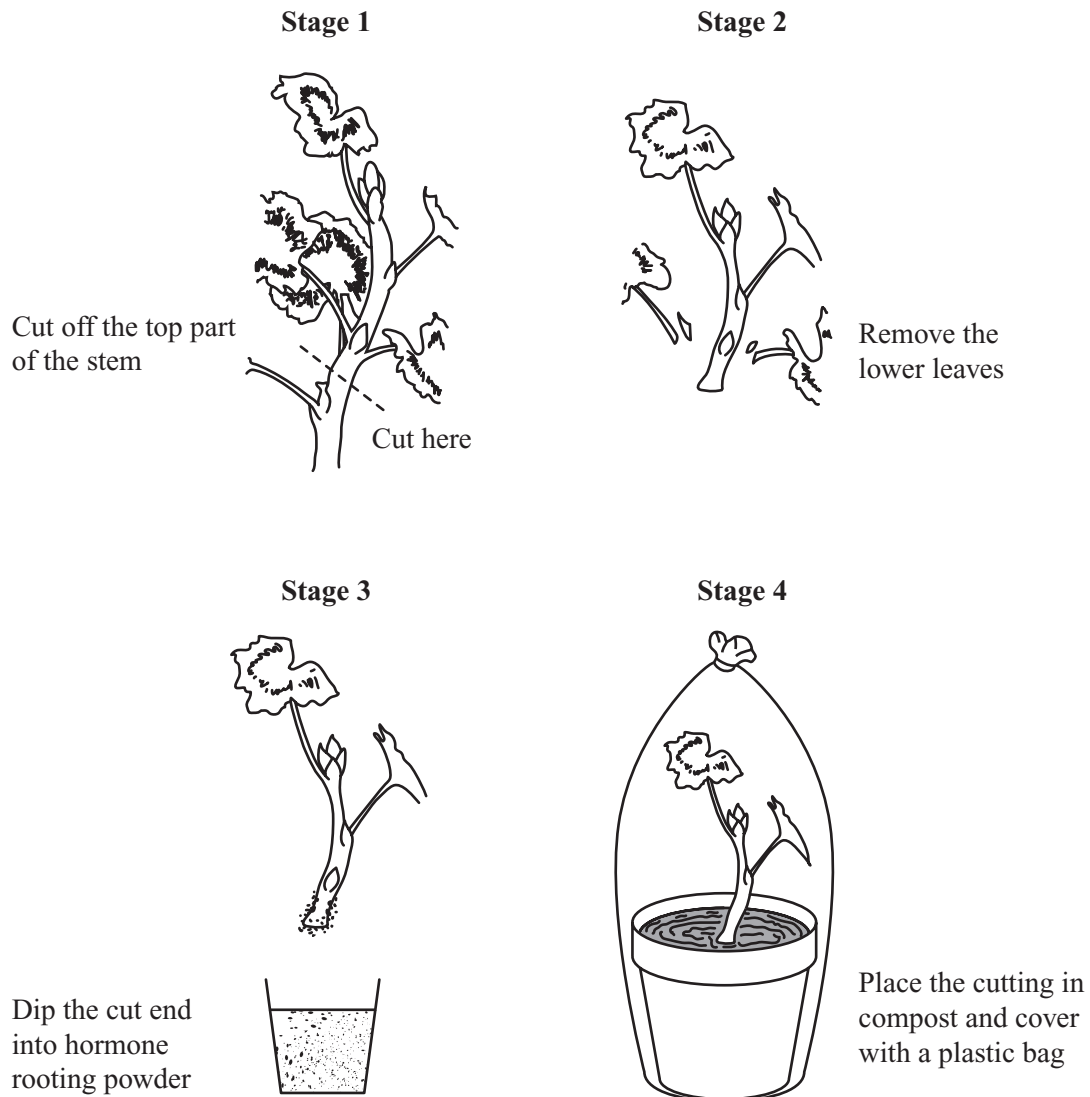
(1 mark)

$\frac{\quad}{6}$

TURN OVER FOR THE NEXT QUESTION

Turn over ►

- 7 (a) New plants can be produced from a parent plant by taking cuttings. The diagram shows how this is done.



(i) Hormone rooting powder stimulates the growth of new roots (Stage 3). Why would the cutting die without roots?

.....
(1 mark)

(ii) Why were the cutting and the pot of soil covered with a plastic bag (Stage 4)?

.....
(1 mark)

(b) A new variety of plant was developed by a gardener. Would the first plant of this new variety have been grown from a seed or from a cutting taken from another plant? Explain your answer as fully as you can.

To gain full marks in this question you should write your ideas in good English. Put them into a sensible order and use the correct scientific words.

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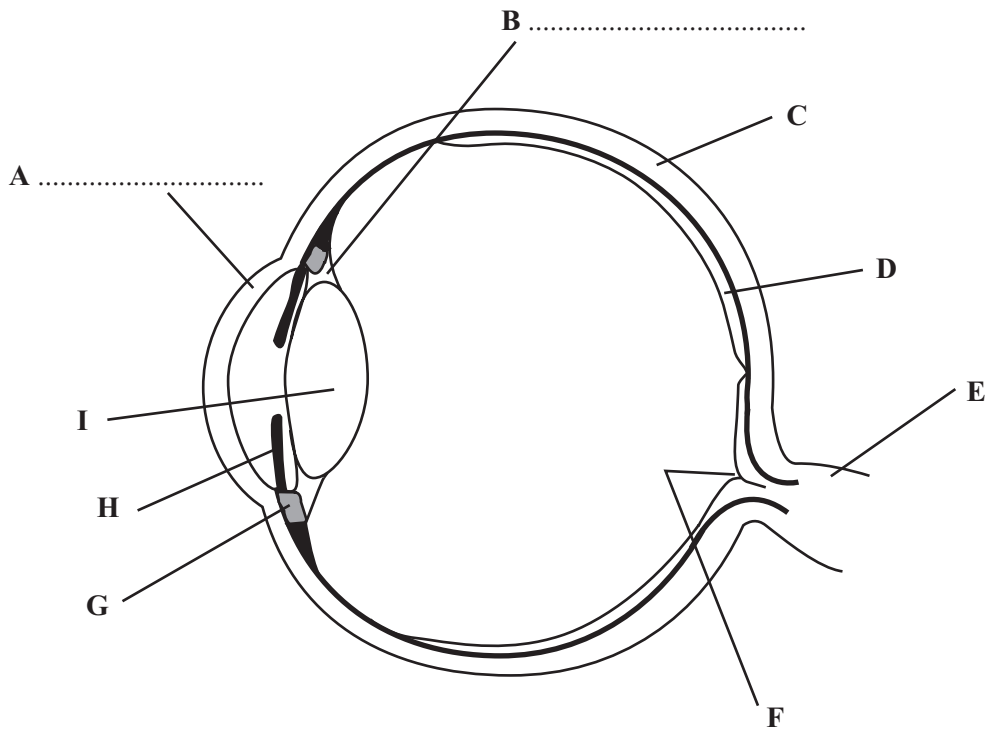
(3 marks)

5

TURN OVER FOR THE NEXT QUESTION

Turn over ►

8 The diagram shows a section through the eye.



(a) On the diagram, label parts **A** and **B**. (2 marks)

(b) Give the letter, **A** to **I**, of the part which controls the amount of light entering the eye.

Letter.....
(1 mark)

(c) What is the function of part **E**?

.....
(1 mark)

END OF QUESTIONS

4