

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

1. (a) Draw a straight line from each drug to its main effect on the body. One has been done for you.

drug	effect on the body
alcohol	reduces headache pain
paracetamol	slows down your reactions and may cause liver damage
caffeine	can make you unconscious for operations
barbiturate	makes the mind and body more active

(3)

- (b) Mark a cross (☒) next to the correct words to complete the sentence.

Doctors can give heroin to terminally ill patients to

cure them	<input type="checkbox"/>
reduce pain	<input checked="" type="checkbox"/>
stop infections	<input type="checkbox"/>

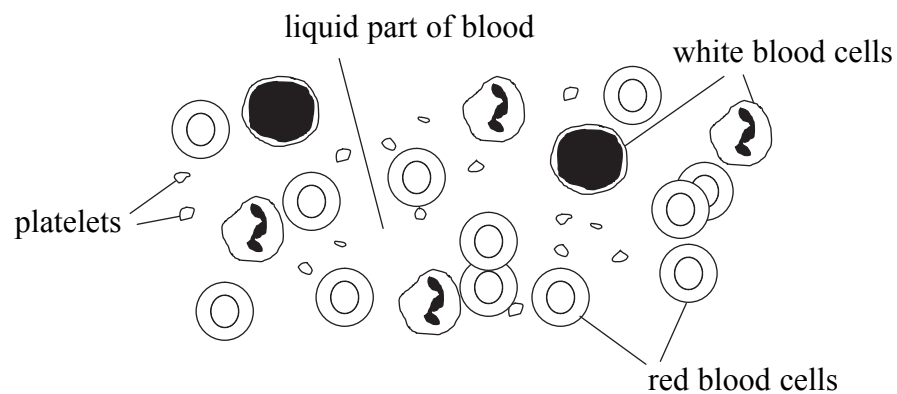
(1)

Q1

(Total 4 marks)



2. The diagram shows human blood.



Choose words from the box to complete the following sentences.

clot	flow	plasma	red
solid	soluble	water	white

- (a) The liquid part of the blood is called (1)

- (b) Glucose can be carried in this part of the blood because glucose is (1)

- (c) Oxygen is carried in the blood cells. (1)

- (d) If the number of platelets is low, blood may not quickly. (1)

(Total 4 marks)

Q2



3. James and Julie are expecting a child.

(a) Two haploid cells join together at fertilisation to produce a zygote (fertilised egg). Name these two haploid cells.

..... and

(1)

(b) Julie gives birth to a girl.

Mark a cross (☒) next to the correct letters to complete the sentence.

XX

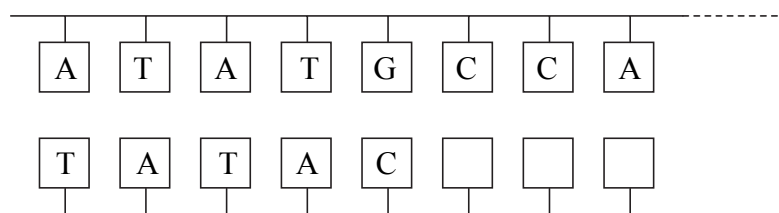
The sex chromosomes in a girl are XY

YY

(1)

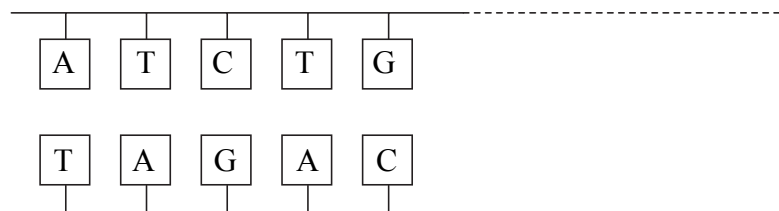
(c) Chromosomes contain DNA.

(i) Complete the diagram of a DNA molecule by writing in the correct letters for the bases in the three empty boxes.



(2)

(ii) After cell division, the first part of the new DNA is not an exact copy of the original.



State how the first part of this DNA has changed.

.....
.....

(1)

(iii) What is a change in the chemical structure of DNA called?

.....

(1)

(Total 6 marks)

Q3



4. Wheat plants were grown in different soils with a pH range from 6.5 to 4.5. Other conditions were kept the same. The table shows the average heights of the wheat plants after one week.

pH	6.5	5.5	4.5
Average height of wheat (cm)	11.0	8.4	4.2

- (a) Describe how the acidity of the soil affects the average height of the wheat plants.

.....
.....
.....

(2)

- (b) Name one substance that combines with water vapour in the air to form acid rain.

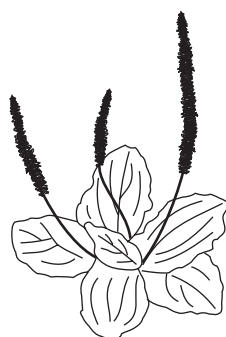
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(1)

- (c) The pictures show two plants found in a lawn.

plantain

grass



Acid rain affects plantains more than grass. Using information in the pictures, suggest a reason for this.

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.....

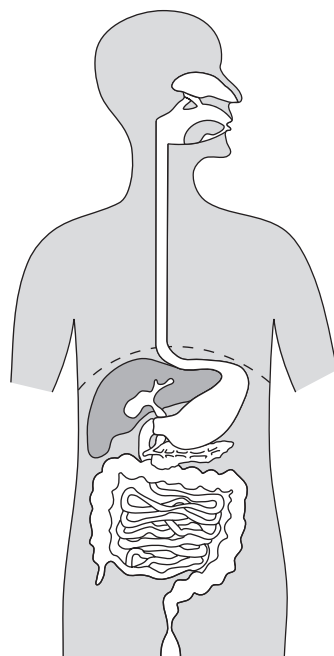
(1)

Q4

(Total 4 marks)



5. The diagram shows the main parts of the digestive system.



(a) On the diagram, label and name **one** organ where enzymes that digest starch are added to food.

(2)

(b) Carole and Jon add this enzyme to some potato. Ten minutes later they test the mixture and find that there are simple sugars present.

Carole says 'This proves that the enzyme digests starch to produce simple sugars'.

Jon says 'I don't think that it does, there may be another reason for the result'.

Give a reason why Jon's statement is correct.

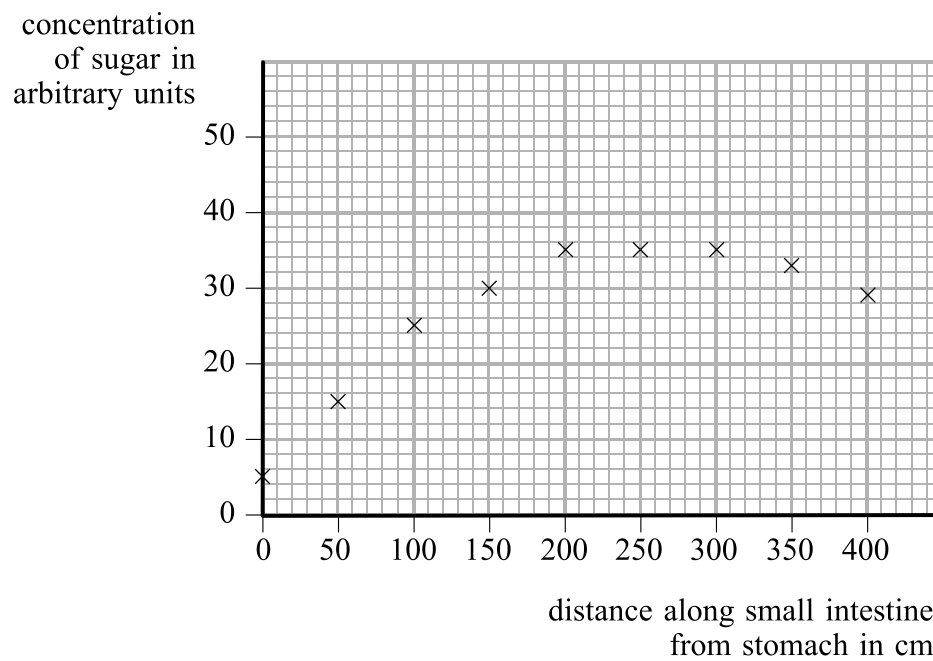
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(1)



(c) The concentration of sugar in the small intestine was measured four hours after eating a meal with a high content of starch.

The graph shows how the concentration of sugar in the small intestine changes with distance from the stomach.



(i) Complete the graph by drawing a suitable line. (1)

(ii) Describe how the concentration of sugar changes from 0 to 300 cm from the stomach.

.....
.....
.....

(2)

(iii) Suggest why the concentration of sugar decreases after 300 cm from the stomach.

.....
.....
.....

(2)

(Total 8 marks)

Q5



6. The following is part of an article from a science magazine.

When the completed human genome was published in 2003, Dr James Watson said:

'The completion of the Human Genome Project is a truly momentous occasion for every human.'

(a) What is the human genome?

.....
.....

(1)

(b) Suggest how the results of the Human Genome Project may benefit humans.



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.....
.....

(3)

(Total 4 marks)

Q6

TOTAL FOR PAPER: 30 MARKS

END

