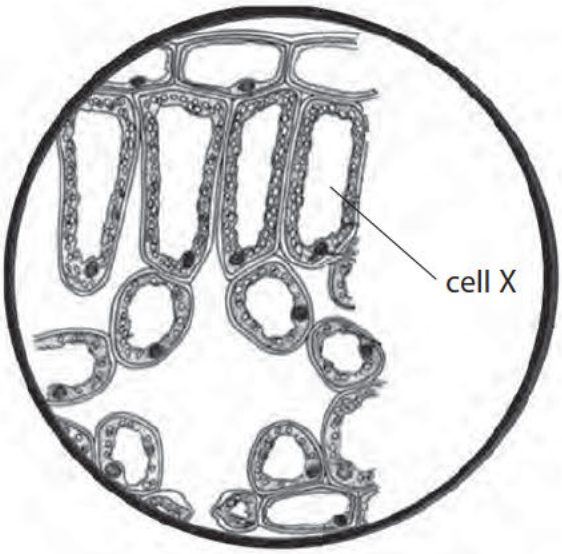
1 A student uses a microscope to look at some cells from an organ found in a plant.

The diagram shows what the student observes through the microscope. One cell has been labelled X.



(a) Name the organ that the student observes.

(1)

.....

(b) What is meant by the term **organ**?

.....

.....

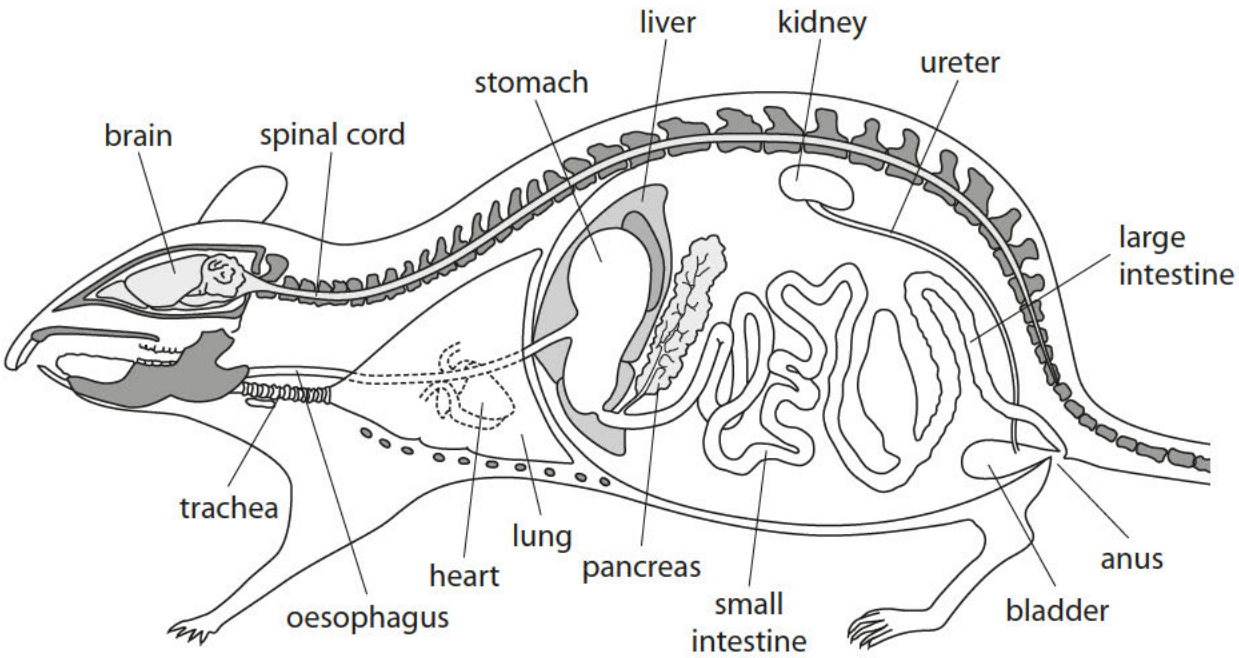
(1)

(c) Draw a labelled diagram of cell X.

(3)

(Total for Question = 5 marks)

2 The diagram shows a section through a rat. Some of the rat's organs have been labelled.



(a) (i) What is meant by the term **organ**?

(1)

.....

.....

(ii) Name the organ labelled in the diagram that is part of the circulation system.

(1)

.....

(iii) Name three other systems shown in the diagram.

(3)

1 .....

2 .....

3 .....

(iv) Name a system that is **not** shown in the diagram.

(1)

.....

(b) The table lists several processes that take place in the organs of a rat.

Complete the table by naming the correct organ for each process.

(5)

Process	Organ
ultrafiltration	
ventilation	
insulin secretion	
hydrochloric acid secretion	
bile production	

(Total for Question = 11 marks)

3 (a) The table shows some of the levels of organisation within an organism.

Complete the table by inserting a tick (✓) to show the level of organisation of each example. The first one has been done for you.

(4)

	Level of organisation		
Example	**Organelle**	**Organ**	**System**
nucleus	✓		
circulation			
chloroplast			
leaf			
bulb			

(b) P e the following human structures in order of size from the smallest to the largest.

liver	red blood cell	eye	white blood cell	kidney

(2)

Order	**Structure**
smallest ↓ largest	

(Total for Question = 6 marks)

4 The diagram shows one side of an organ donor card.

I request that after my death

A. any part of my body may be used for the treatment of others ☐, or

B. my kidneys ☐ corneas ☐ heart ☐ lungs ☐ liver ☐ pancreas ☐ be used for transplantation.

Signature _____ Date _____

Full name _____
(BLOCK CAPITALS)

In the event of my death, if possible contact:

Name _____ Tel. _____

Remember to tell someone close to you that you want to be an organ donor. We'll need their agreement if the time ever comes.

(a) The table lists different human illnesses.

Complete the table by giving the donated organ **named on the card** needed to cure each illness. The first one has been done for you.

(5)

Illness	Organ needed to cure illness
uremia	kidney
emphysema	
coronary failure	
diabetes	
hepatitis	
poor vision	

(b) Describe the role of the liver in digestion.

(2)

(c) There is a shortage of people willing to donate their organs. Scientists hope to create cloned organisms to solve this problem.

(i) What is a **cloned** organism?

(2)

(ii) Suggest **two** advantages of using cloned organisms to provide organs rather than relying on people to donate organs.

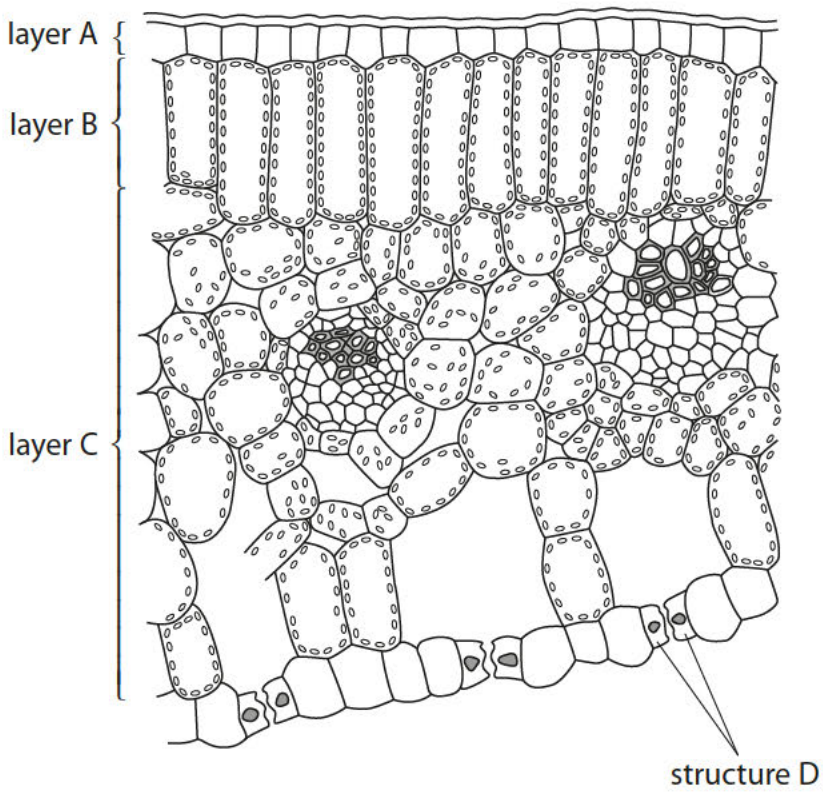
(2)

1

2

(Total for Question = 11 marks)

5 The diagram shows a cross section through a leaf.



(a) Each part of the leaf is adapted for a specific function.

Name each part of the leaf and explain how it helps the leaf in photosynthesis.

(i) Layer A

(2)

.....

.....

.....

.....

(ii) Layer B

(3)

.....

.....

.....

.....

.....

.....

(iii) Layer C

(3)

(iv) Structure D

(2)

(b) Water lilies float on the surface of ponds. Structure D is found on the upper surface of a water lily rather than the lower surface.

Suggest a reason for this adaptation.

(2)

.....

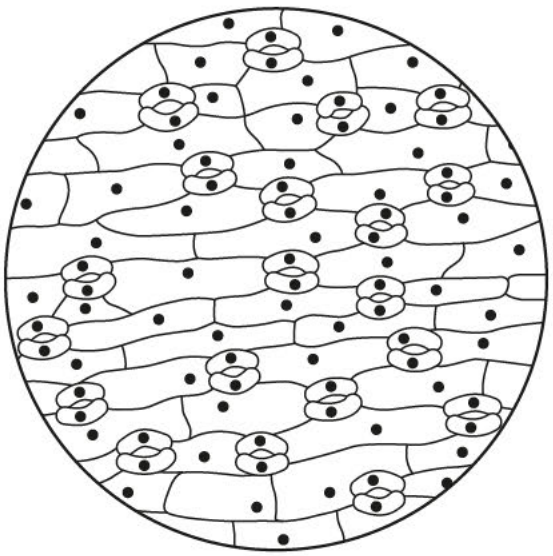
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(c) A student examined the upper and lower surfaces of a leaf from a land plant using a microscope.

This is her diagram of the lower surface.



(i) How many stomata are shown in the diagram?

(1)

.....

(ii) Suggest how the upper surface of the land plant would differ from this diagram.

(1)

.....

.....

.....

(Total for Question = 14 marks)