Rewarding Learning

Centre Number

| 71 | |
|---|---|

Candidate Number

| |
|---|

General Certificate of Secondary Education
2011–2012

# Science: Double Award (Modular)

## Living Organisms and the Processes of Life
## End of Module Test
## Foundation Tier

**A**

**[GDA01]**

GDA01

**TUESDAY 8 NOVEMBER 2011**
**1.30 pm–2.15 pm**

| For Examiner's use only | |
|---|---|
| Question Number | Marks |
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |
| 15 | |
| Total Marks | |

**TIME**

45 minutes.

**INSTRUCTIONS TO CANDIDATES**

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Answer **all fifteen** questions.

**INFORMATION FOR CANDIDATES**

The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

| Examiner Only | |
|---|---|
| Marks | Remark |
| | |

**1** Abuse of drugs can harm individuals and society.

**(a)** Describe **two** ways in which excessive alcohol use over a long time can cause harm to an **individual's** health.

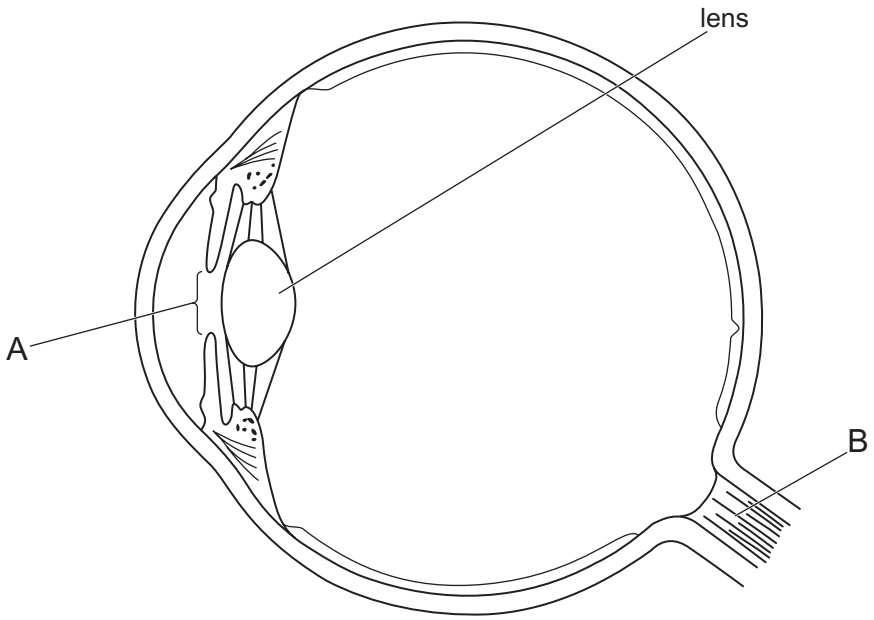
_____

_____ [2]

**(b)** Describe the effects of a hallucinogen on a person.

_____ [1]

**2** The diagram shows a section through an eye.




**(a)** Name the parts labelled A and B.

A _____

B _____ [2]

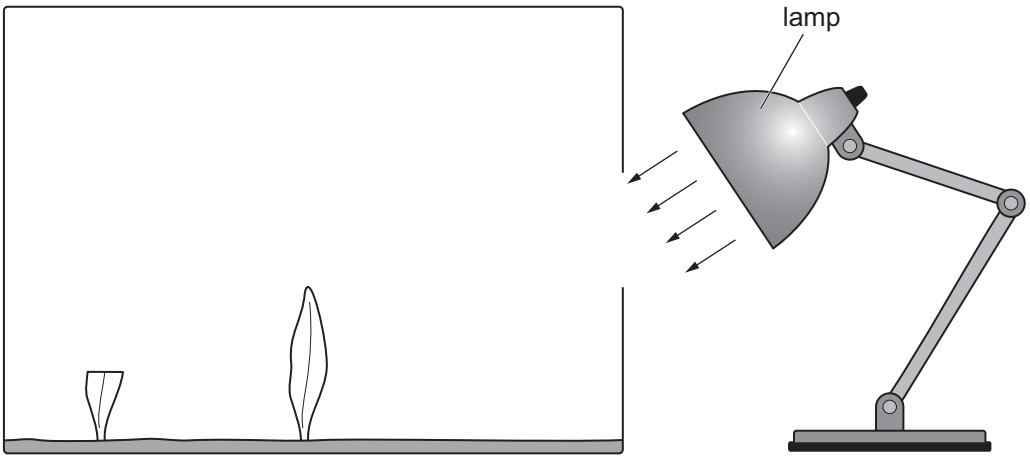
**(b)** What is the function of the lens?

_____ [1]

| Examiner Only | |
|---|---|
| Marks | Remark |

**3** This experiment was set up to investigate how barley seedlings respond to light coming from one side.

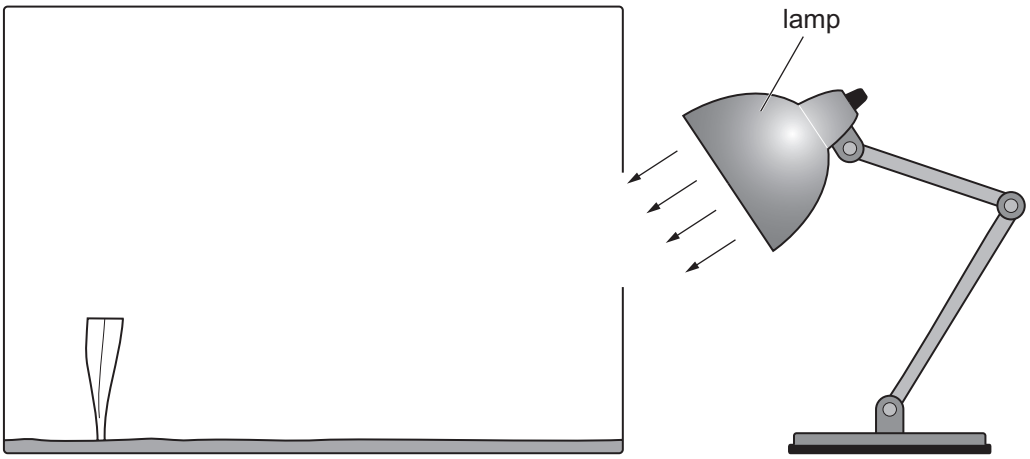
## at start




barley seedling with tip removed

barley seedling

## after 3 days




**(a)** In the bottom diagram, sketch the result you would expect for the barley seedling nearest the lamp. [1]

**(b)** What is the name of this growth response?

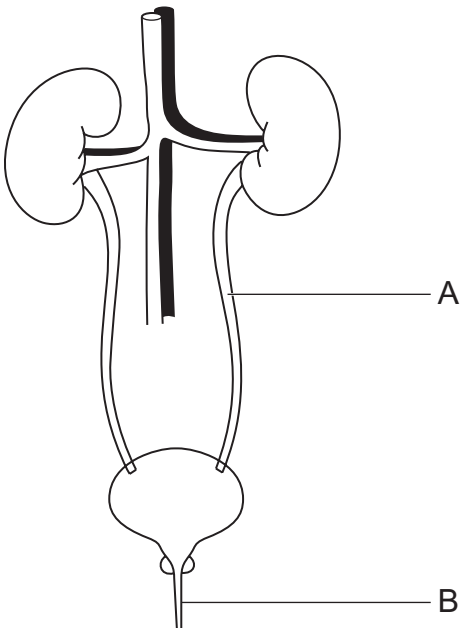
_____ [1]

**(c)** Name the type of substance involved in this growth response.

_____ [1]

**4** The diagram shows part of the human excretory system.

| Examiner Only | |
|---|---|
| Marks | Remark |
| | |




**(a)** Name parts A and B.

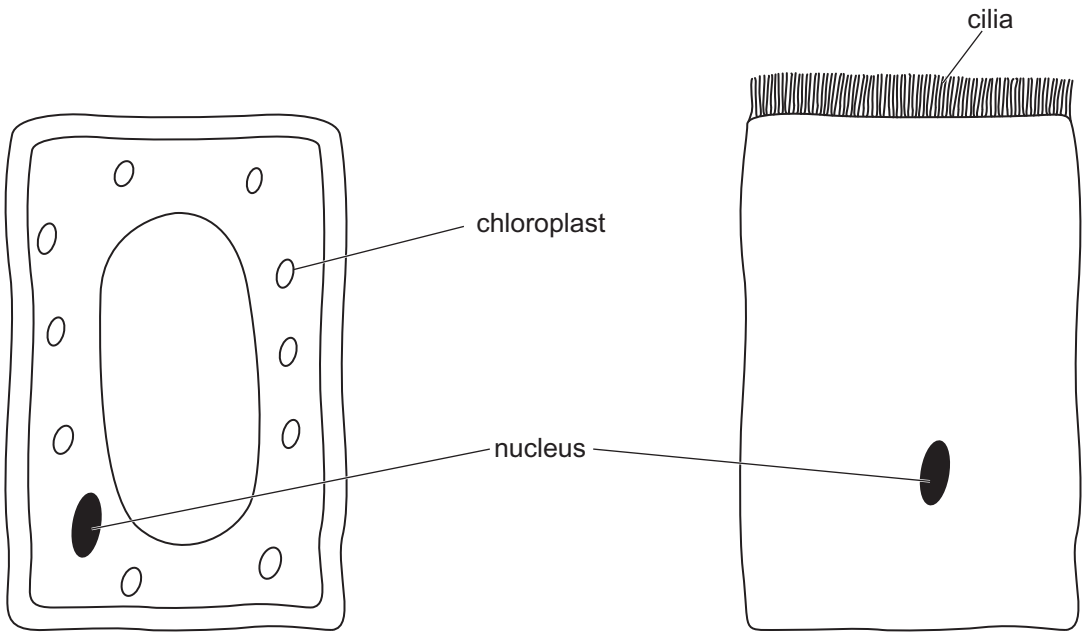
A _____

B _____ [2]

**(b)** As well as excretion, the kidney has another very important role in homeostasis. Name this other role.

_____ [1]

**5** The diagram shows two types of cell.




**cell type A** **cell type B**

**(a)** Where would you expect to find cell type A in a plant?

_____ [1]

**(b)** Give one place where ciliated epithelium (cell type B) is found in animals.

_____ [1]

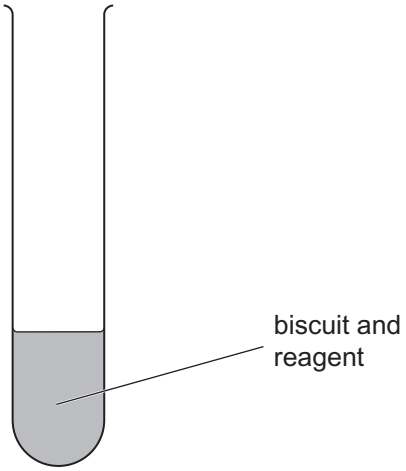
**(c)** Name the genetic structures that are present in the nucleus of cells.

_____ [1]

| Examiner Only | |
|---|---|
| Marks | Remark |
| | |

| Examiner Only | |
|---|---|
| Marks | Remark |
| | |

**6** A student carried out a food test to find out if a biscuit contains sugar. The biscuit was ground up into crumbs and a chemical reagent added.




**(a)** Name the chemical reagent added to the biscuit to test for the presence of sugar.

_____ [1]

**(b)** Describe what has to happen after adding the reagent to complete the test.

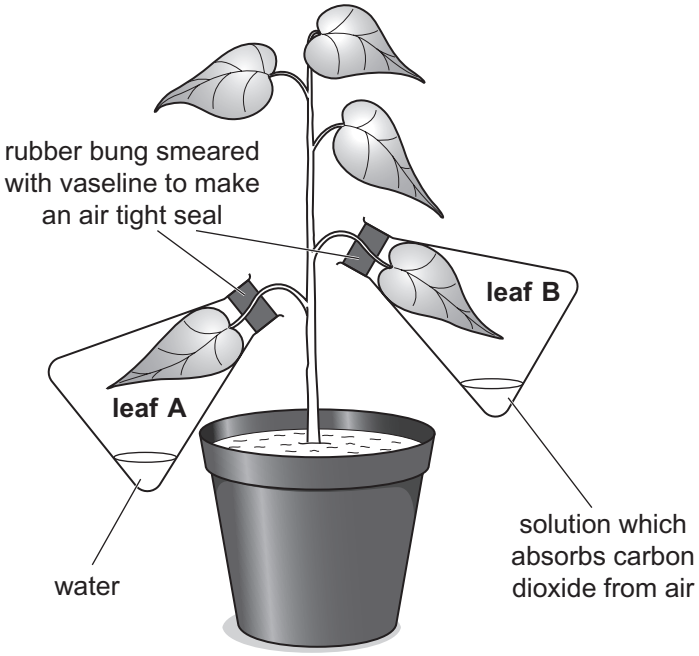
_____ [1]

**(c)** Describe the colour change that occurs if the biscuit contains sugar.

_____ to _____ [1]

| Examiner Only | |
|---|---|
| Marks | Remark |

**7** The apparatus below was set up to find out if carbon dioxide is needed for photosynthesis. The plant was destarched and then left in a warm, sunny place for a few days after which leaf A and leaf B were tested for starch with iodine.




**(a)** Explain the function of **leaf A**.

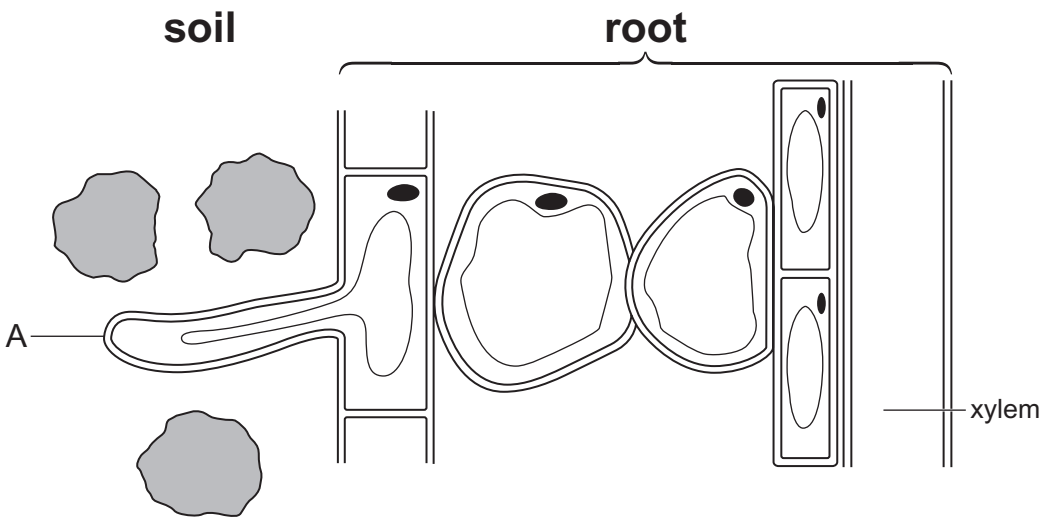
_____ [1]

**(b)** After testing with iodine, describe the colour you would expect for each leaf.

Leaf A _____

Leaf B _____ [2]

**8** The diagram shows part of a root.




**(a)** Name cell type A.

_____ [1]

**(b)** Give the function of xylem.

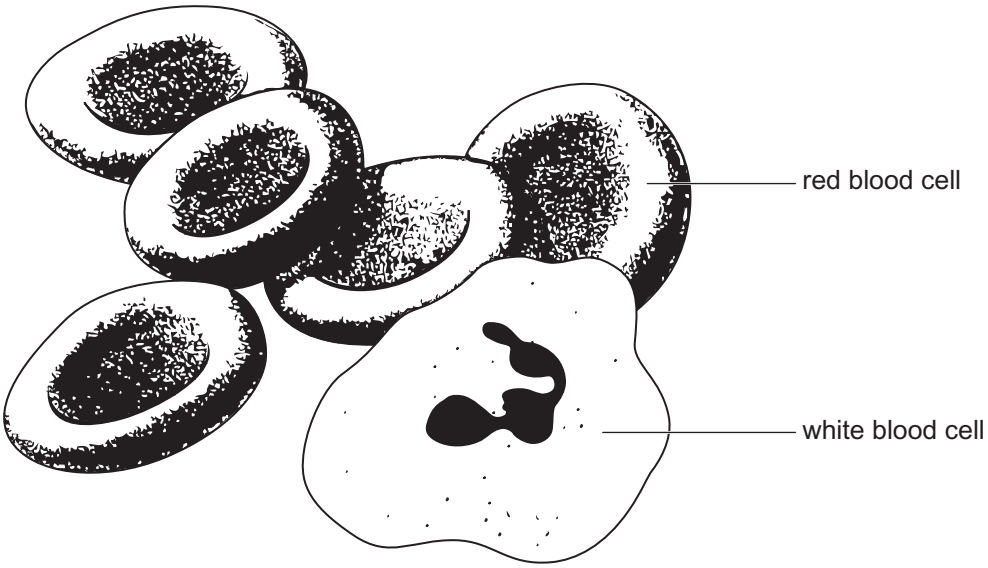
_____ [1]

**(c)** If there is not enough nitrate in the soil, explain how this will affect the plant.

_____ [1]

| Examiner Only | |
|---|---|
| Marks | Remark |
| | |

**9** The diagram shows two types of blood cell.




**(a)** Complete the table to give two differences shown in the diagram, between a white blood cell and a red blood cell.

| Difference | White blood cell | Red blood cell |
|---|---|---|
| 1 | | |
| 2 | | |

[2]

**(b)** The liquid that transports blood cells carries other substances around the body. Name this liquid and give one substance, apart from blood cells, that it transports.

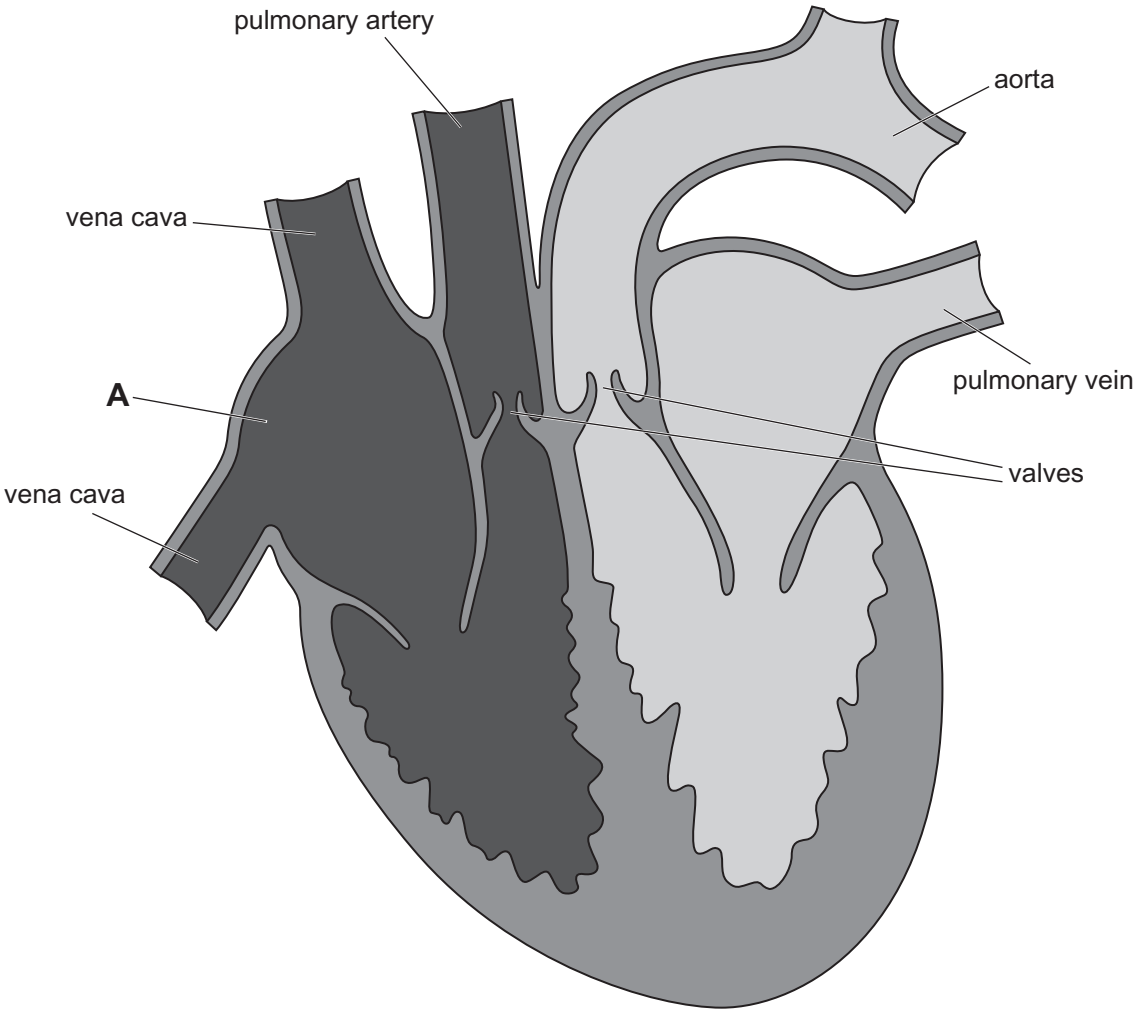
_____

_____ [2]

Examiner Only

| Marks | Remark |
|---|---|
| | |

**10** The diagram shows a section through the human heart.




**(a)** Name the heart chamber labelled **A**.

_____ [1]

**(b)** Use the diagram to name the two blood vessels that carry oxygenated blood.

1. _____

2. _____ [2]

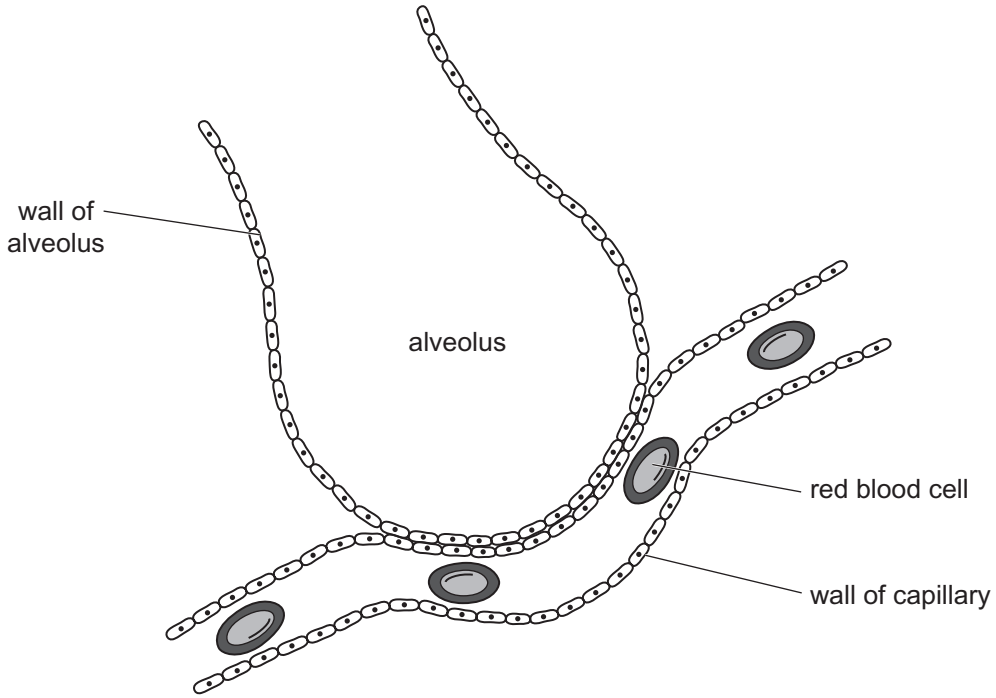
**(c)** Suggest a function for the presence of the valves in the pulmonary artery and the aorta.

_____ [1]

Examiner Only

| Marks | Remark |
|---|---|
| | |

**11** The diagram shows an alveolus with its associated capillary.




**(a)** Use the diagram to state one feature about the wall of the alveolus that helps gas exchange.

_____ [1]

**(b)** Name the gas that diffuses from the alveolus into the red blood cells.

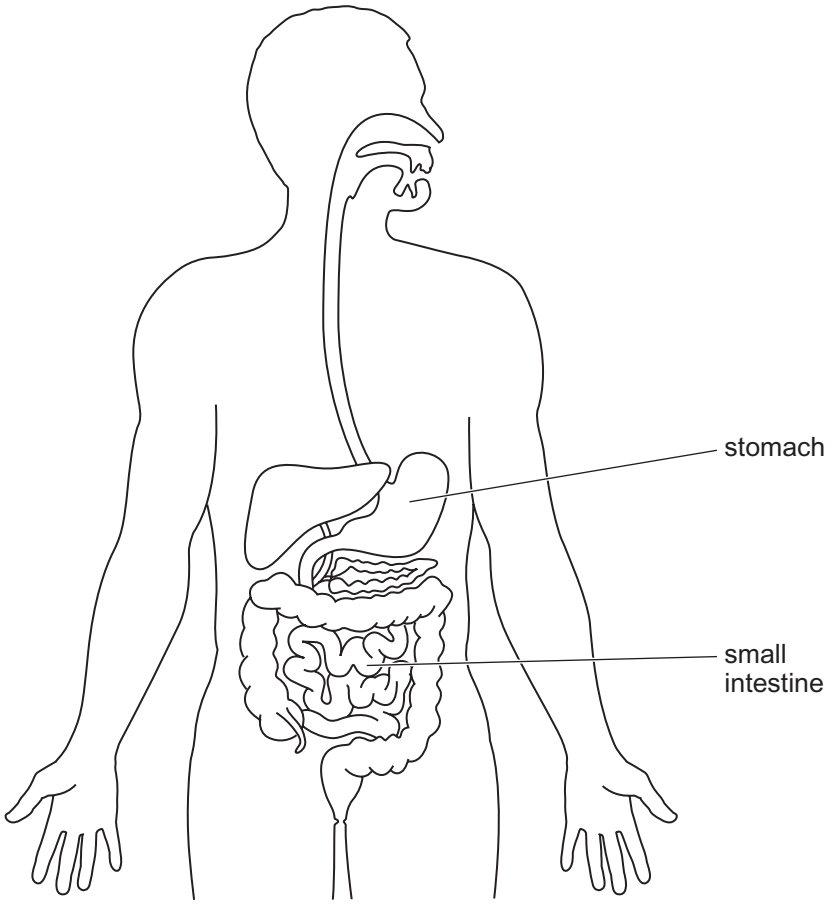
_____ [1]

**(c)** Explain how having millions of alveoli in the lung facilitates gas exchange.

_____ [1]

| Examiner Only | |
|---|---|
| Marks | Remark |
| | |

**12** The diagram shows the digestive system.






**(a)** What type of digestive enzyme is present in the stomach?

_____ [1]

**(b)** Describe one way, **not visible in the diagram**, in which the small intestine is adapted for absorption.

_____ [1]

**(c)** Name the organ that digested food molecules such as amino acids and glucose are taken to immediately after being absorbed.

_____ [1]

| Examiner Only | |
|---|---|
| Marks | Remark |
| | |

**13** **(a)** Give an example of a disease caused by a fungus.

_____ [1]

**(b)** Complete the table below about active and passive immunity.

| Type of immunity | Source of antibodies |
|---|---|
| Active immunity | |
| Passive immunity | |

[2]

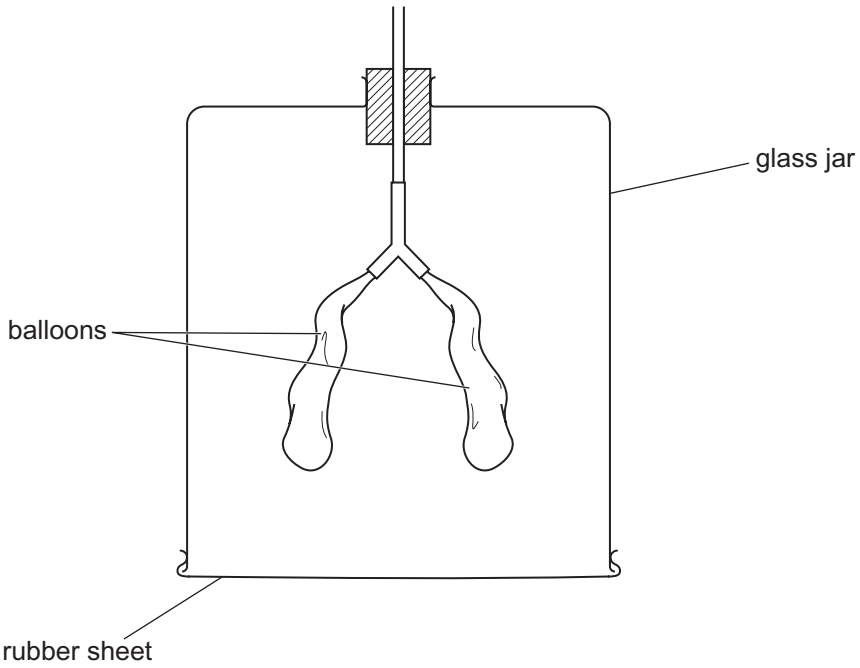
**(c)** Explain why active immunity is described as long-term, whereas passive immunity is only short-term.

_____ [1]

Examiner Only

| Marks | Remark |
|---|---|
| | |

**14** The diagram shows apparatus that can be used to demonstrate breathing in a human.




**(a)** What structure does the rubber sheet represent?

_____ [1]

**(b)** Explain why the balloons inflate when the rubber sheet is pulled down.

_____

_____ [2]

**(c)** Describe one way in which the balloons, shown in the diagram, do not accurately represent the structure of the lungs.

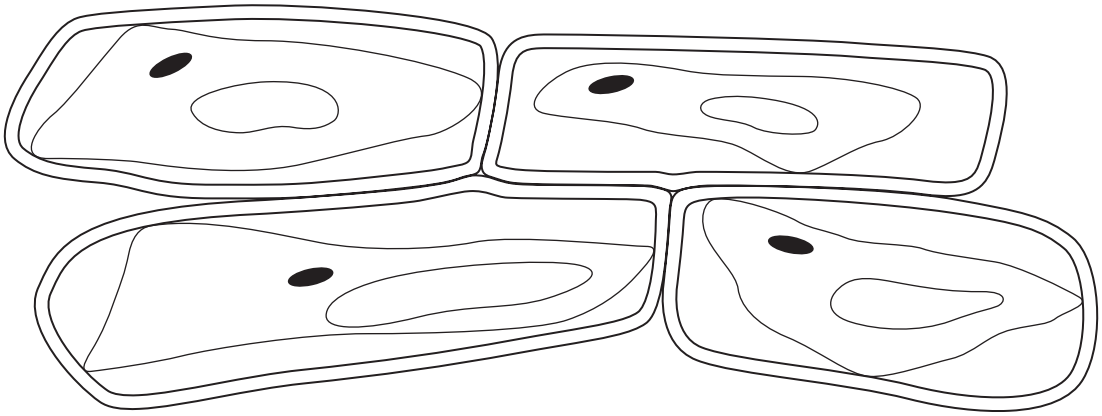
_____ [1]

| Examiner Only | |
|---|---|
| Marks | Remark |
| | |

| Examiner Only | |
|---|---|
| Marks | Remark |
| | |

**15** Jenny placed onion epidermis cells in a 10% sugar solution and examined a section of them using a microscope.

Some of the cells are shown below.



Describe and explain the appearance of these cells.

[4]

**THIS IS THE END OF THE QUESTION PAPER**

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