Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME	
CENTRE NUMBER	
CANDIDATE NUMBER	

5774824962

BIOLOGY **0610/32**

Paper 3 Theory (Core) **February/March 2017**

1 hour 15 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

Electronic calculators may be used.
You may lose marks if you do not show your working or if you do not use appropriate units.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

The syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **15** printed pages and **1** blank page.

DC (KN/CGW) 129194/5
© UCLES 2017

CAMBRIDGE International Examinations

1 The boxes on the left contain the names of glands which secrete enzymes.

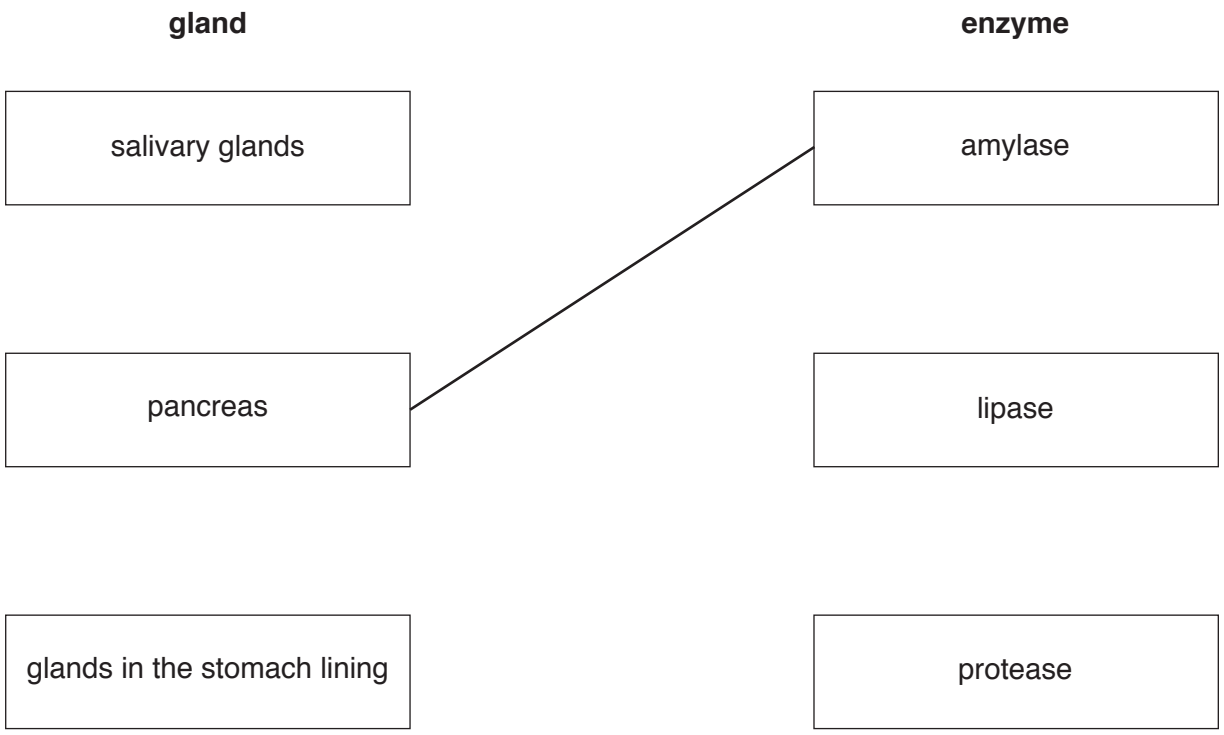
The boxes on the right contain the names of digestive enzymes.

Some glands produce more than one enzyme.

Draw lines to link each gland with the enzyme or enzymes it produces.

Draw **four** lines.

One has been drawn for you.



[4]

[Total: 4]

© UCLES 2017

2 Fig. 2.1 shows a diagram of the heart.

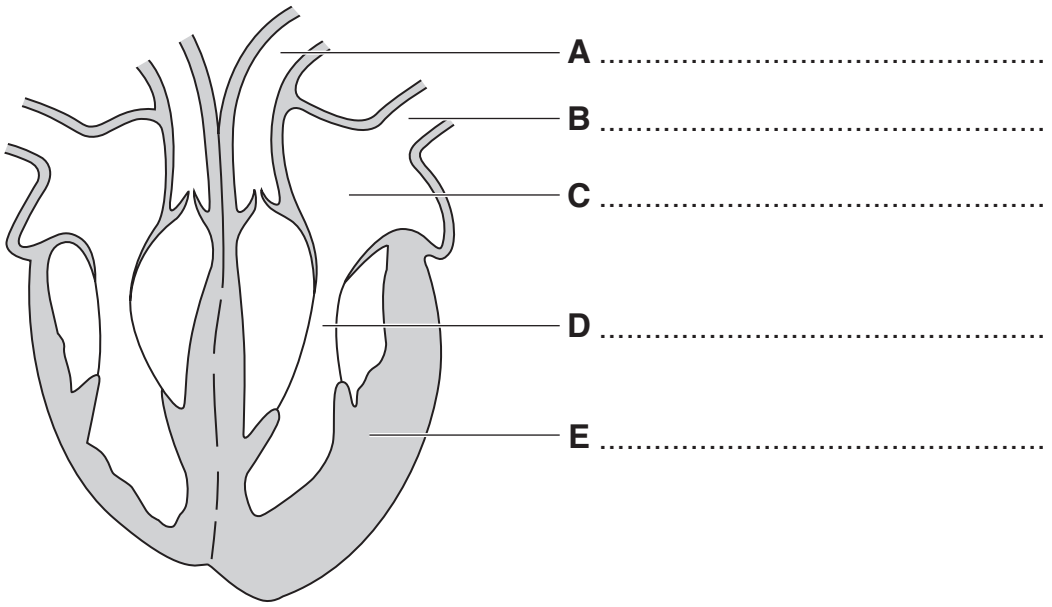


Fig. 2.1

(a) (i) Complete Fig. 2.1 by adding names to the label lines.

Choose names from this list:

aorta **atrium** **muscular wall** **pulmonary artery**

pulmonary vein **septum** **vena cava** **ventricle**

[5]

(ii) State the name of the heart chamber that pumps blood to the lungs.

.....[1]

© UCLES 2017

[Turn over

(b) The volume of blood the heart pumps out per minute is called the cardiac output.

Fig. 2.2 shows how the cardiac output changes for students **F** and **G** as exercise increases.

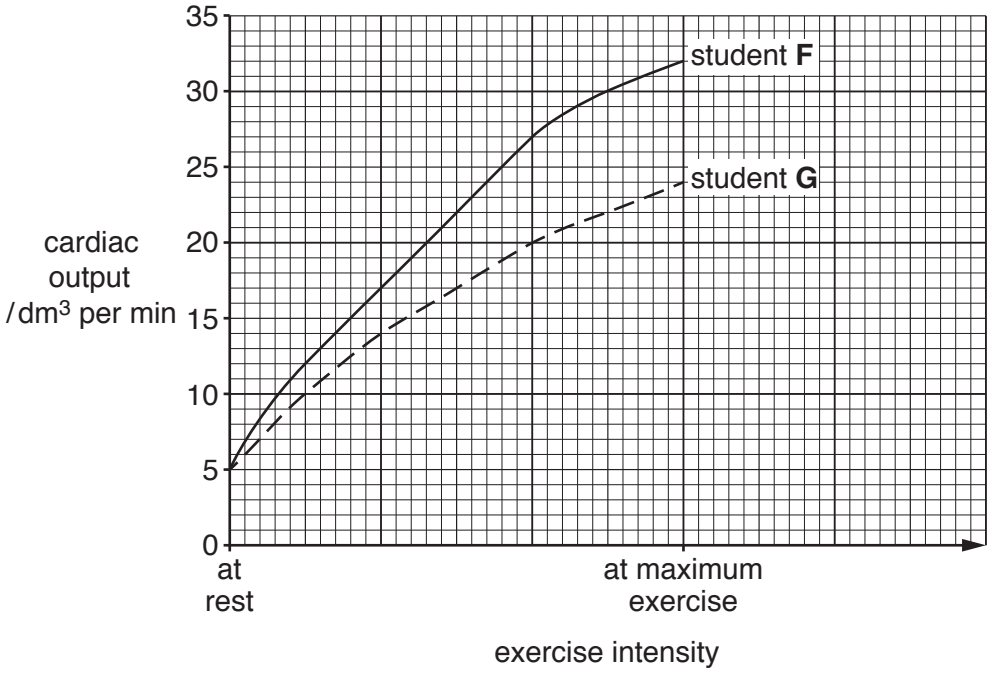


Fig. 2.2

(i) Use Fig. 2.2 to state the cardiac output for student **F** when resting and when doing maximum exercise.

when resting .....

when doing maximum exercise .....

[2]

(ii) Calculate the percentage increase in cardiac output of student **G** from rest to maximum exercise.

Show your working.

.....%

[2]

(iii) Suggest **two** ways the activity of the heart changes to produce an increase in cardiac output.

1 .....

.....

2 .....

.....
[2]

(iv) During exercise, student **F** has a higher cardiac output than student **G**.

Suggest **one** reason for this difference.

.....

.....[1]

[Total: 13]

3 Fig. 3.1 shows a reflex arc.

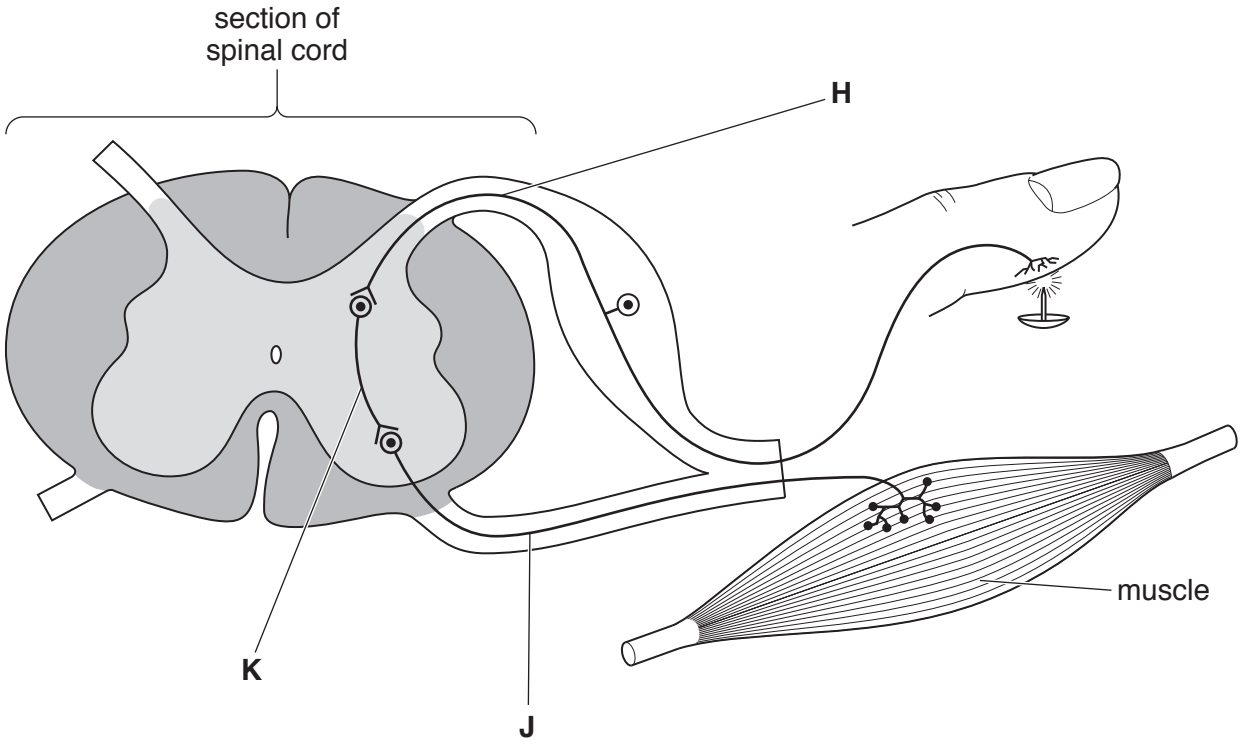


Fig. 3.1

(a) (i) Name the structures labelled **H**, **J** and **K**.

Choose your answers from the following words or phrases:

effector **motor neurone** **receptor**

relay neurone **sensory neurone**

Write your answers in Table 3.1.

Table 3.1

letter	name
H	
J	
K	

[3]

(ii) On Fig. 3.1, draw a small circle around **one** synapse. [1]

(iii) State **two** characteristics of a reflex action.

1 .....

2 .....

[2]

© UCLES 2017

(b) Fig. 3.2 shows what happens when a person picks up a hot object.

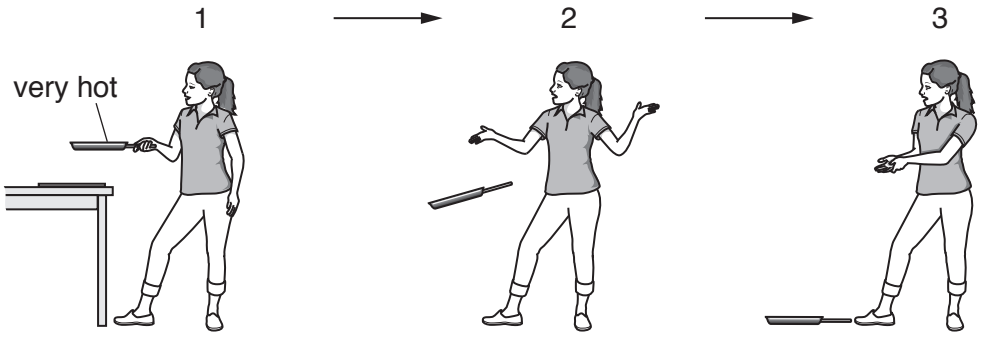


Fig. 3.2

(i) Use Fig. 3.2 to suggest why reflex actions are important.

.....

.....

.....

.....

.....

.....[2]

(ii) State one other reflex action in the body.

.....

.....[1]

[Total: 9]

© UCLES 2017

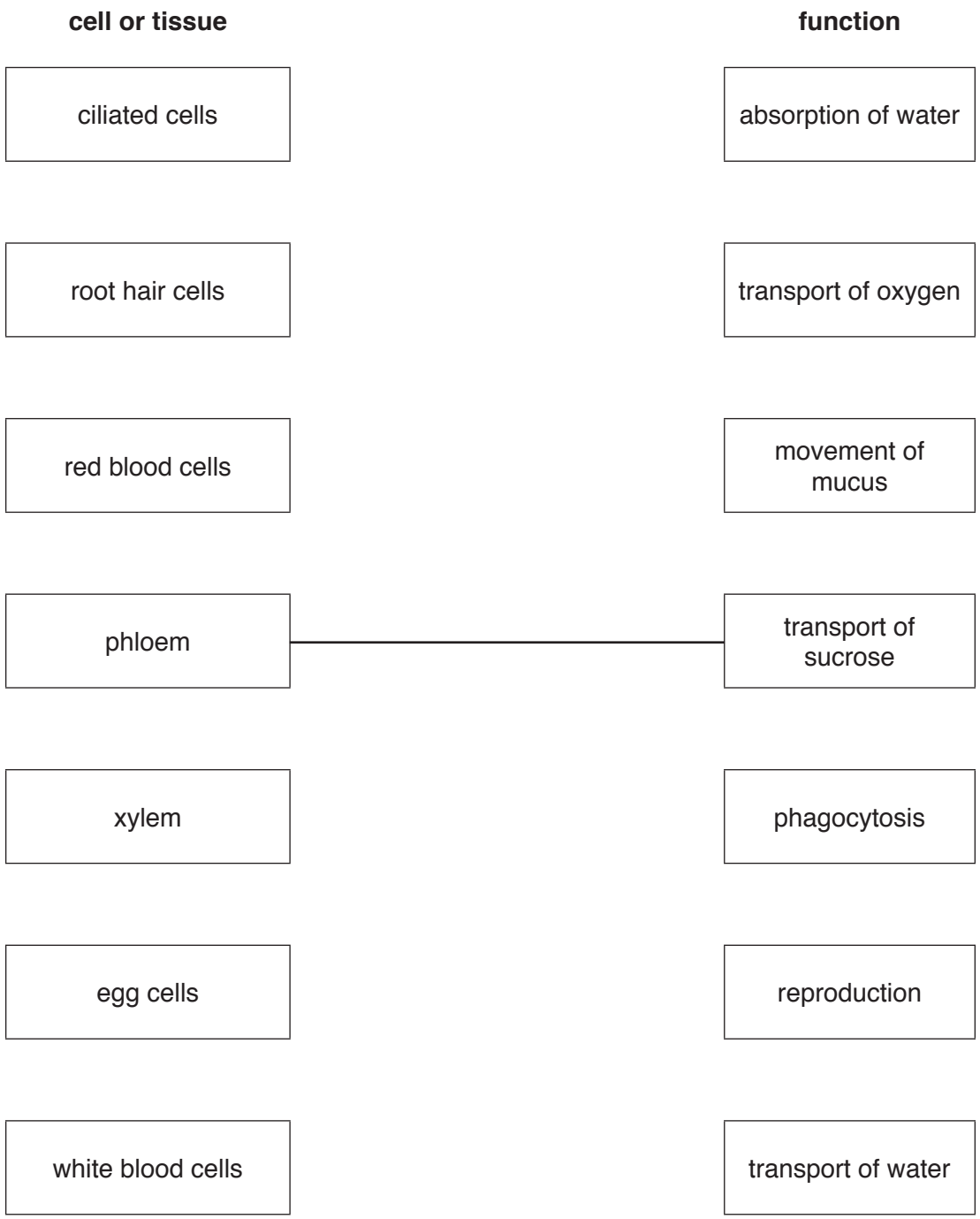
[Turn over

4 The boxes on the left contain the names of cells and tissues specialised for carrying out a particular function.

The boxes on the right contain descriptions of specialised functions.

Draw **one** straight line to link each specialised cell or tissue with its correct function.

An example has been done for you.



[5]

[Total: 5]

© UCLES 2017

5 **(a)** Define the term *species*.

.....

.....

.....

.....[2]

(b) Table 5.1 shows the names of vertebrate groups and some of their characteristics.

Place a tick in the boxes to show if the characteristic is commonly present in that group.

The characteristics of the fish group have been done for you.

Table 5.1

	group of vertebrates				
characteristic	fish	amphibians	reptiles	birds	mammals
have feathers over most of the body					
have scales over most of the body	✓				
lay eggs	✓				
maintain a constant body temperature					
young are fed on milk					

[5]

[Total: 7]

6 **(a)** **(i)** State the word equation for photosynthesis.

.....[2]

(ii) A plant needs chlorophyll to photosynthesise.

Name the part of a plant cell that contains chlorophyll.

.....[1]

(iii) State **two** types of specialised cell that contain chlorophyll.

1 .....

2 .....
[1]

(b) In an investigation, some students placed a plant in bright light.

They measured the rate of photosynthesis at different temperatures.

The results are shown in Fig. 6.1.

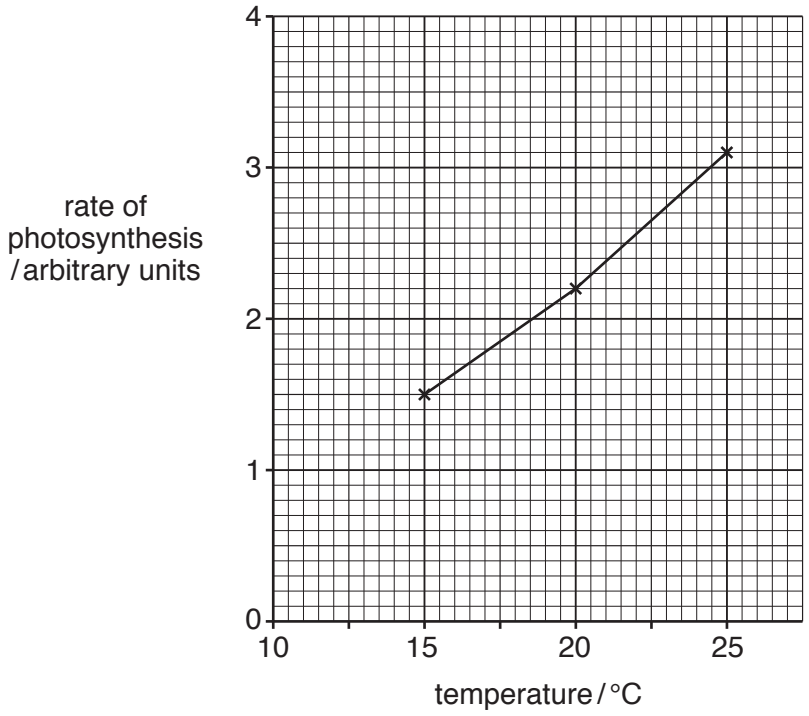


Fig. 6.1

© UCLES 2017

(i) Describe the results shown in Fig. 6.1.

.....

.....

.....

.....[2]

(ii) Suggest an explanation for these results.

.....

.....

.....

.....

.....[2]

(iii) Predict the effects on the rate of photosynthesis if the investigation is carried out at 60 °C.

Explain your reason.

prediction .....

reason .....

.....

.....

[2]

[Total: 10]

BLANK PAGE

© UCLES 2017

7 **(a)** Choose words or phrases from the list to complete the sentences about the **enhanced** greenhouse effect.

Each word or phrase may be used once, more than once or not at all.

carbon dioxide **carbon monoxide** **deforestation**

flooding **egestion** **methane** **nitrogen**

photosynthesise **respire** **water vapour**

The enhanced greenhouse effect leads to climate change. One reason for this increased effect is that many trees are cut down. Cutting down large areas of trees is called ..... .

When trees are cut down they cannot ..... and so the concentration of ..... in the atmosphere increases.

Another gas that increases the greenhouse effect is ..... .

[4]

(b) Describe **two** reasons why humans cut down trees.

1 .....

.....

.....

.....

2 .....

.....

.....

.....

[4]

(c) An increase in some greenhouse gases is one undesirable effect of cutting down trees.

State **two** other examples of these undesirable effects.

1 .....

.....

2 .....

.....

[2]

[Total: 10]

8 Fig. 8.1 shows part of a food web.

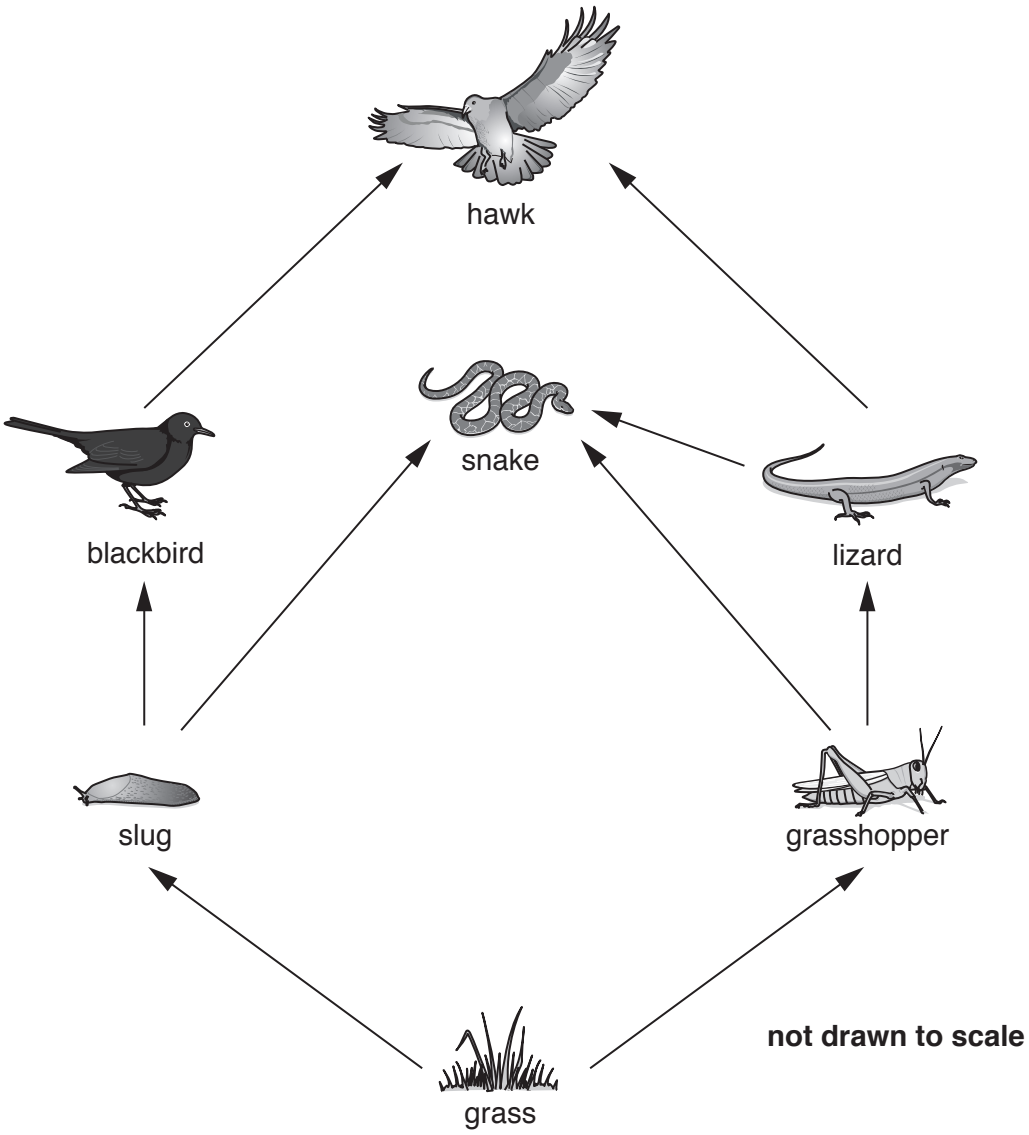


Fig. 8.1

(a) (i) State the principle source of energy for this food web.

.....[1]

(ii) Explain what the arrows on Fig. 8.1 represent.

.....

.....[1]

(iii) State the number of different secondary consumers in this food web.

..... secondary consumers [1]

© UCLES 2017

(iv) Name the organism that is **both** a secondary and a tertiary consumer.

.....[1]

(v) State what would happen to the number of hawks if the snakes in this food web all died.

Explain your answer.

number of hawks .....

explanation .....

.....

.....
[3]

(b) (i) The food web shown in Fig. 8.1 changed when eagles moved into the area.

Eagles eat snakes and lizards.

Add this information to Fig. 8.1. You do **not** need to draw an eagle. [1]

(ii) State **one** factor that will increase the eagle population and **one** factor that will decrease the eagle population.

increase .....

decrease .....
[2]

(iii) Define the term *population*.

.....

.....

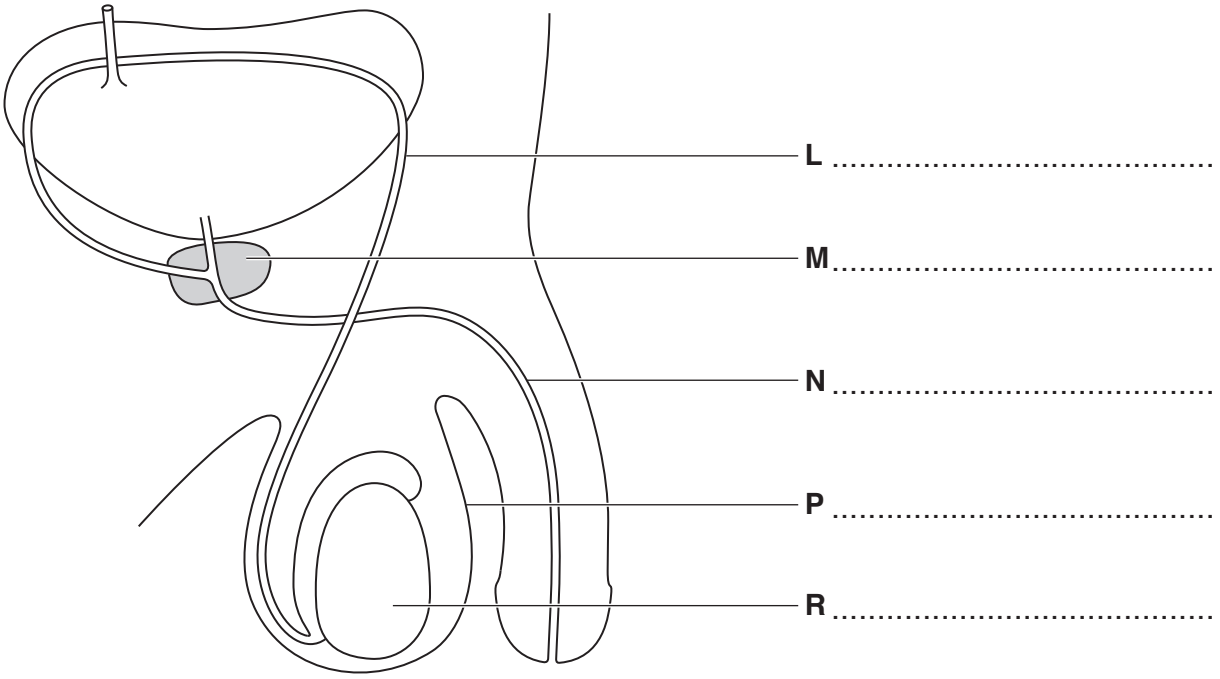
.....[2]

[Total: 12]

9 Fig. 9.1 shows the male reproductive system as seen from the side.

(a) State the name of each labelled structure in Fig. 9.1.

Write your answers in the spaces provided.



[5]

Fig. 9.1

(b) **(i)** Draw an **X** on Fig. 9.1 to show where sperm cells are made. [1]

(ii) Draw a small circle on Fig. 9.1 to show where sperm cells leave the body. [1]

(c) State the function of the prostate gland and the scrotum.

prostate gland .....

.....

scrotum .....

.....

[2]

(d) State **one** barrier method of birth control.

.....[1]

[Total: 10]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.

© UCLES 2017