Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/13**

Paper 1 Multiple Choice **October/November 2015**

45 minutes

Additional Materials: Multiple Choice Answer Sheet
Soft clean eraser
Soft pencil (type B or HB is recommended)

7407214976

READ THESE INSTRUCTIONS FIRST

Write in soft pencil.
Do not use staples, paper clips, glue or correction fluid.
Write your name, Centre number and candidate number on the Answer Sheet in the spaces provided unless this has been done for you.
DO **NOT** WRITE IN ANY BARCODES.

There are **forty** questions on this paper. Answer **all** questions. For each question there are four possible answers **A**, **B**, **C** and **D**.
Choose the **one** you consider correct and record your choice in **soft pencil** on the separate Answer Sheet.

Read the instructions on the Answer Sheet very carefully.

Each correct answer will score one mark. A mark will not be deducted for a wrong answer.
Any rough working should be done in this booklet.
Electronic calculators may be used.

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.

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1 What are the characteristics of bony fish?

	maintain constant body temperature	external ears present	jelly-covered eggs	scales
A	✓	✓	✗	✗
B	✓	✗	✓	✓
C	✗	✓	✗	✗
D	✗	✗	✓	✓

2 What are the features of the leaves of a plant that is a eudicotyledon (dicotyledon)?

	broad leaves	parallel veins
A	✓	✓
B	✓	✗
C	✗	✓
D	✗	✗

3 Many snakes that belong to the viper family are unusual in that they give birth to live young.

This is usually a characteristic of which vertebrate group?

A amphibians

B birds

C bony fish

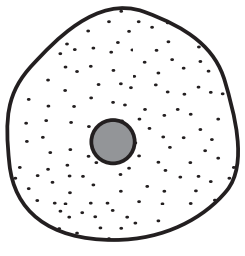
D mammals

4 Use the key to identify which group is amphibians.

1	hair present ……	mammals
	hair absent ……	go to 2
2	feathers present ……	group **A**
	feathers absent ……	go to 3
3	dry scaly skin……..	group **B**
	moist skin ……..	go to 4
4	four limbs ……	group **C**
	no limbs ……..…….....…..…	group **D**

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5 The diagram shows a liver cell.



Which features are present in this cell and also in most plant cells?

A cell membrane and cytoplasm

B cell membrane and sap vacuole

C cell wall and cytoplasm

D cell wall and sap vacuole

6 Which structure is present in a root hair cell but **not** in a liver cell?

A cell wall

B chloroplast

C glycogen granule

D nucleus

7 Which description of the heart is correct?

A The heart is an organ, containing several systems, which forms part of the circulatory tissue.

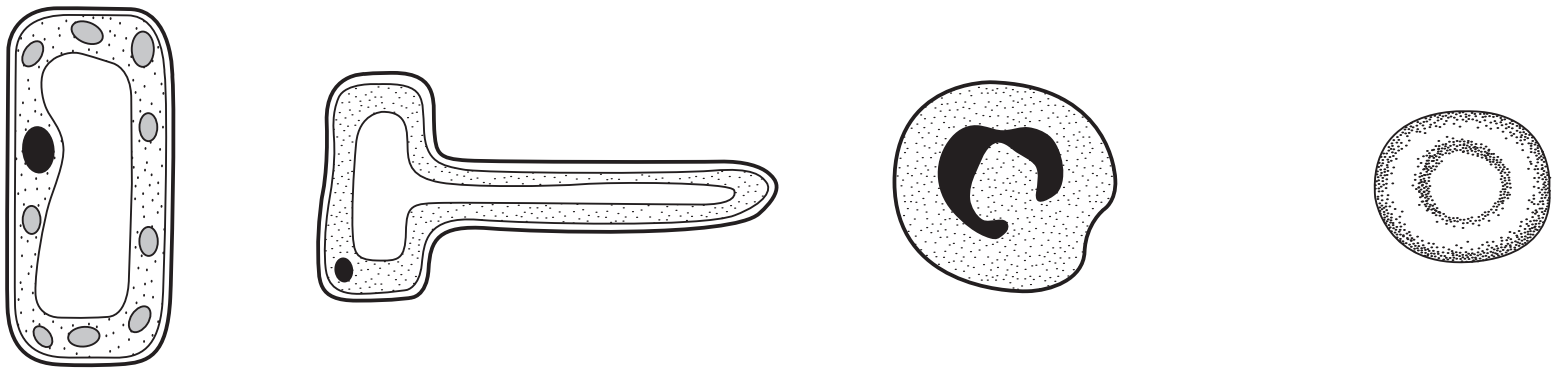
B The heart is an organ, containing several tissues, which forms part of the circulatory system.

C The heart is a system, containing several organs, which forms part of the circulatory tissue.

D The heart is a system, containing several tissues, which forms part of the circulatory organ.

8 The diagram shows four cells.

1 2 3 4

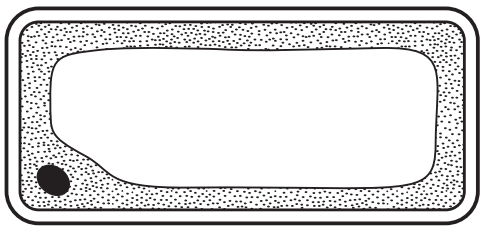


Which two cells contain cellulose and a vacuole?

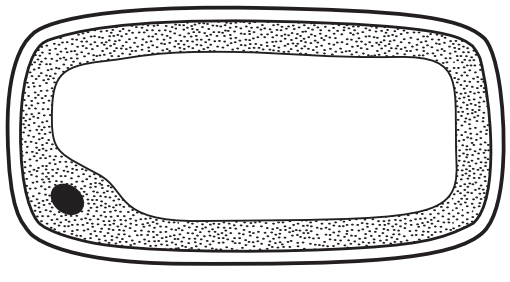
A 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 2 and 4

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9 The diagrams show how a cell appears under the microscope at the start of an experiment and after it has been placed in a dilute solution of salts for 5 minutes.



start of the experiment



after placing in a dilute solution of salts

Which statement explains what happens?

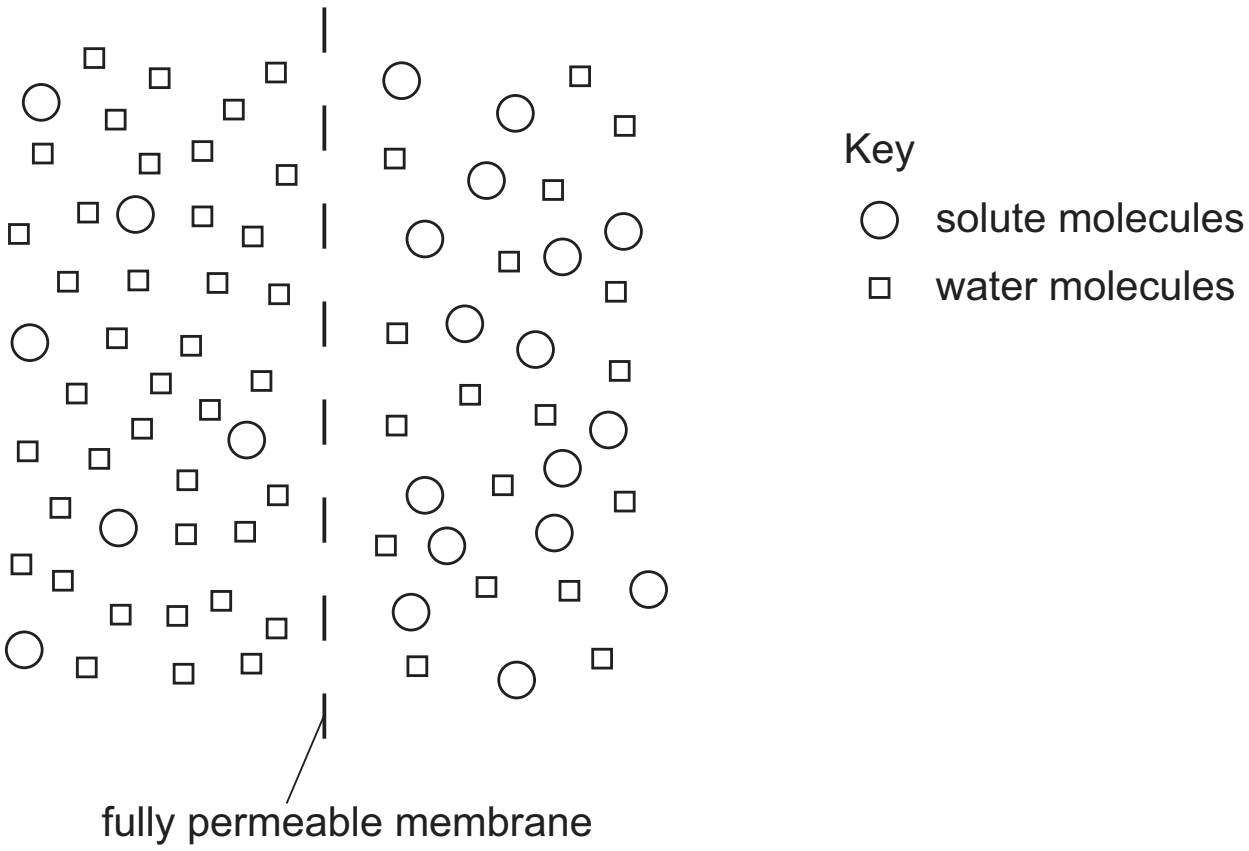
A Dissolved salts enter the cell by diffusion.

B Dissolved salts leave the cell by diffusion.

C Water enters the cell by osmosis.

D Water leaves the cell by osmosis.

10 The diagram represents the molecules in two solutions either side of a **fully permeable** membrane.



In which directions are the net movements of the molecules?

	solute molecules	water molecules
A	left to right	left to right
B	left to right	right to left
C	right to left	left to right
D	right to left	right to left

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11 Which group of compounds ensures that metabolic reactions take place effectively?

A carbohydrates

B enzymes

C fatty acids

D hormones

12 Four different foods were tested for their composition.

The results are shown in the table.

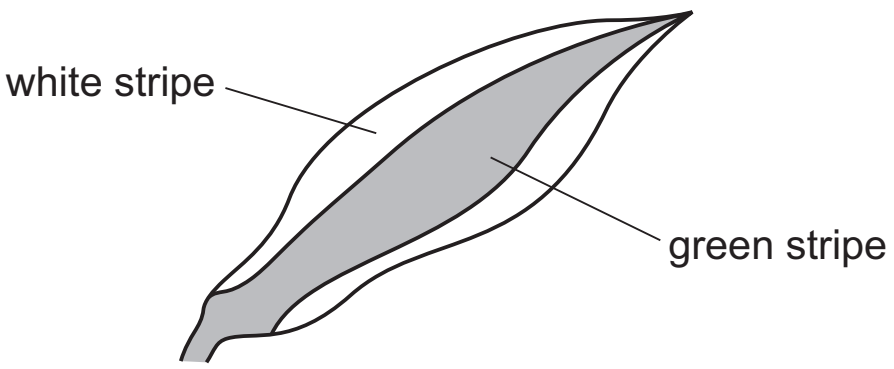
Which food contains protein but **not** reducing sugar or starch?

	Benedict's test	iodine test	biuret test
A	blue	black	purple
B	blue	brown	purple
C	brick red	black	blue
D	brick red	brown	blue

13 What are the smaller basic units of starch and glycogen molecules?

	starch	glycogen
A	amino acids	fatty acids and glycerol
B	amino acids	simple sugars
C	simple sugars	fatty acids and glycerol
D	simple sugars	simple sugars

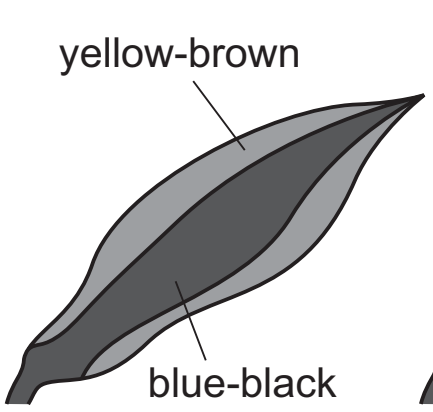
14 A plant with striped leaves similar to the one below was kept in bright light for six hours.



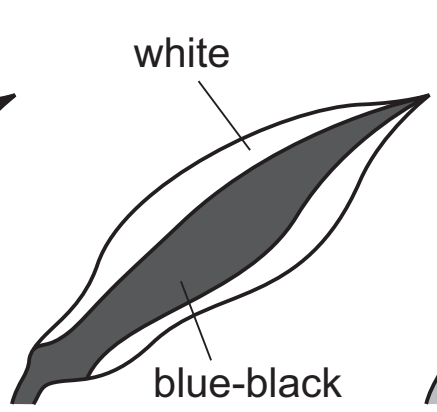
A leaf was taken from the plant and the chlorophyll removed. It was then tested for starch using iodine solution.

Which diagram shows the result of the test?

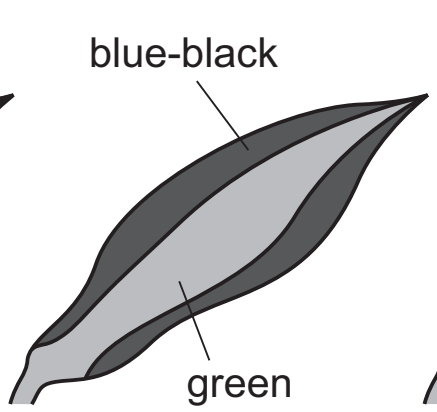
A



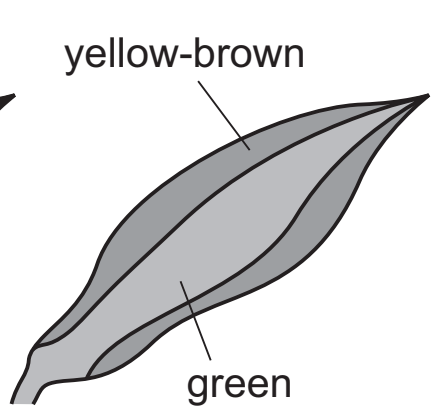
B



C



D



15 Which substances are transported in the phloem?

A amino acids and starch

B amino acids and sucrose

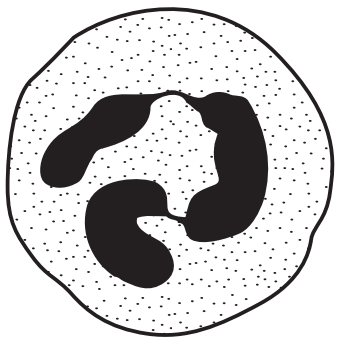
C protein and starch

D starch and sucrose

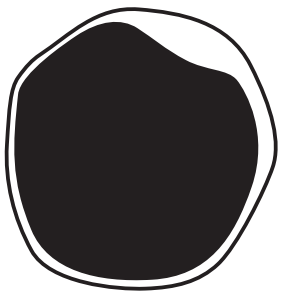
16 The diagrams show some components of the blood of a mammal.

Which component causes the blood to start clotting?

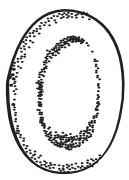
A



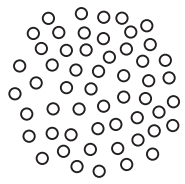
B



C



D



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17 Where are hormones removed from the blood and broken down in the human body?

A gall bladder

B kidneys

C liver

D stomach

18 The list shows four metabolic processes.

1 carbon dioxide + water → glucose + oxygen

2 glucose → alcohol + carbon dioxide

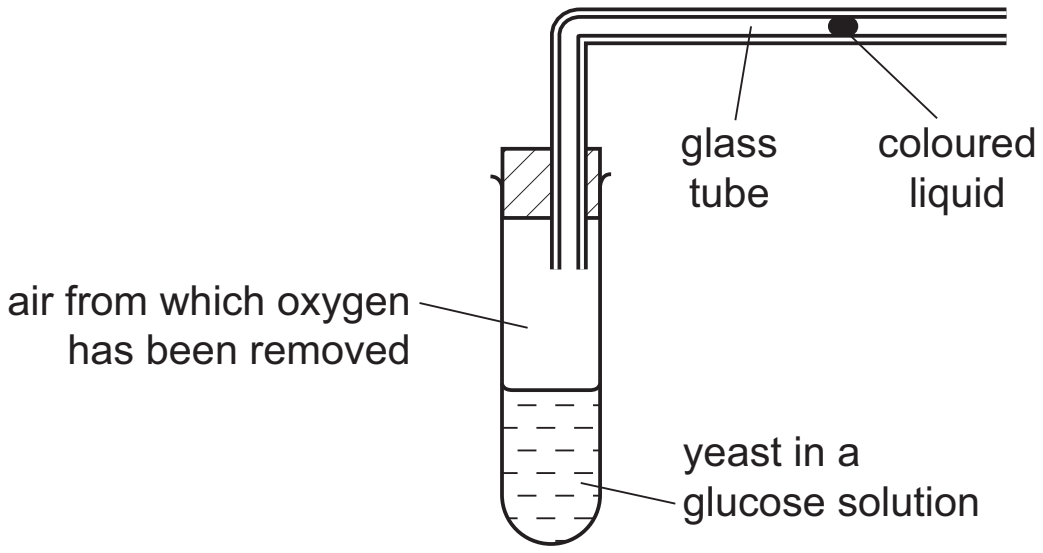
3 glucose → lactic acid

4 glucose + oxygen → carbon dioxide + water

Which of these processes occur in muscles?

A 1 and 2 **B** 2 and 3 **C** 3 and 4 **D** 4 and 1

19 The diagram shows apparatus used to investigate anaerobic respiration in yeast.



What happens to the coloured liquid?

A moves rapidly to the left

B moves slowly to the left

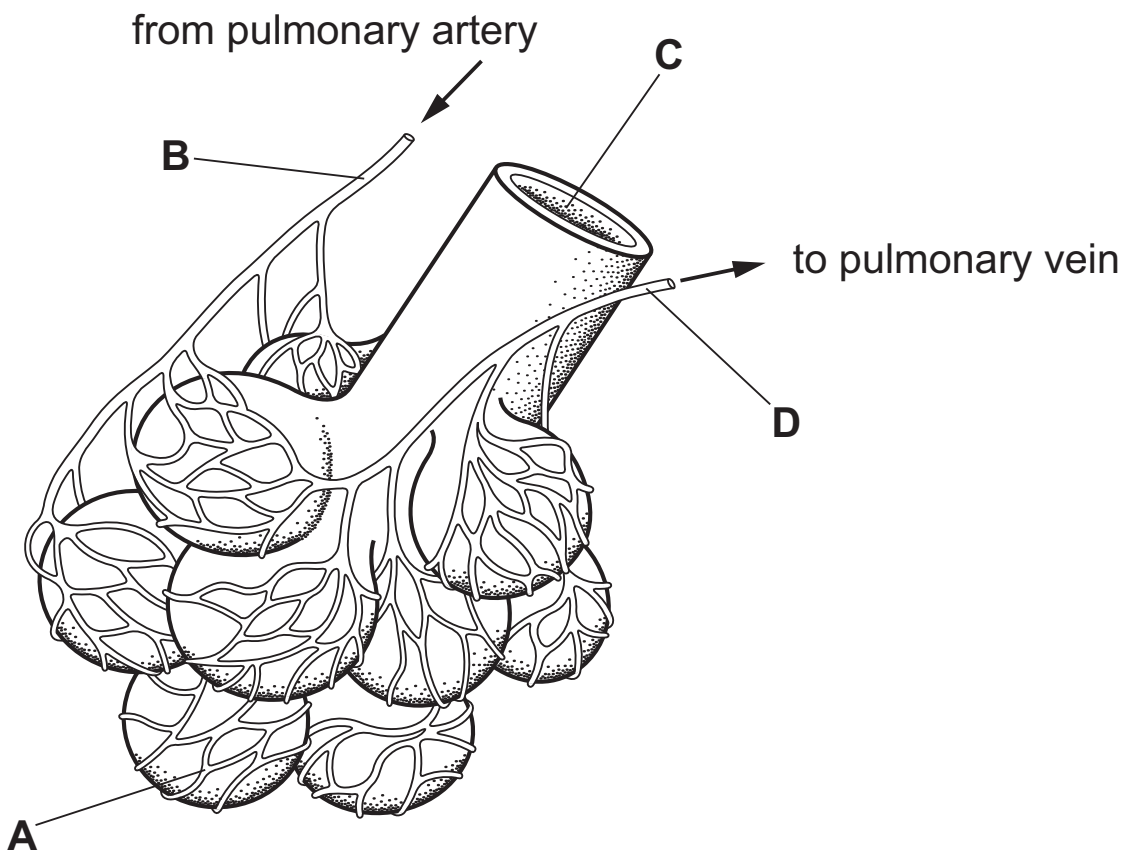
C moves to the right

D stays still

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20 The diagram shows some of the structures in a human lung.

Where is the carbon dioxide concentration highest?



21 Where is urea produced in the human body and from which chemicals is it produced?

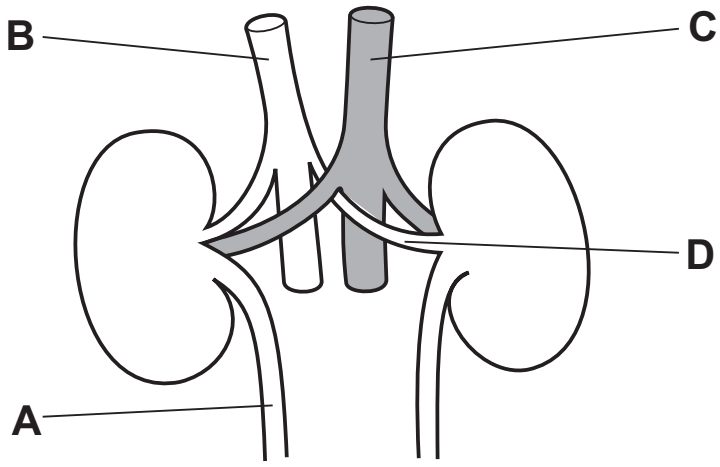
	produced	chemical
A	intestine	proteins
B	kidneys	amino acids
C	kidneys	fatty acids
D	liver	amino acids

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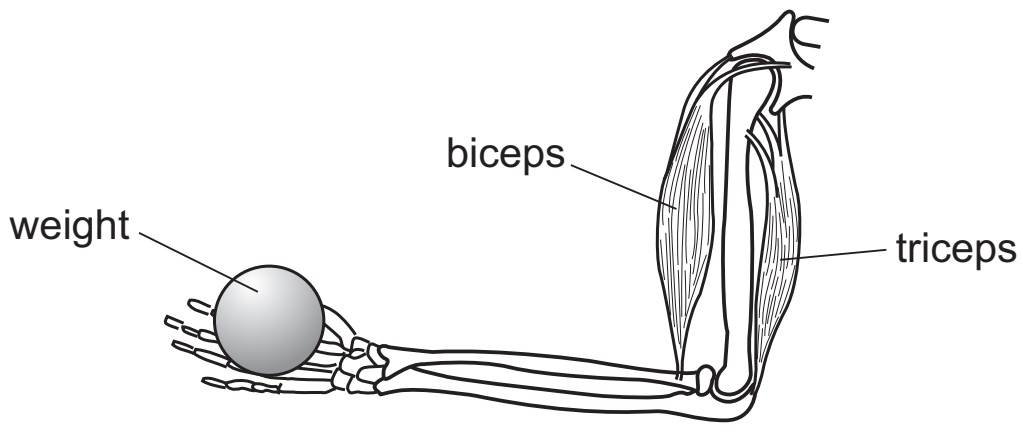
22 The table shows the composition of a liquid found in the human body.

component	concentration / arbitrary units
amino acids	0.00
glucose	0.00
proteins	0.00
salts	1.50
urea	2.00

In a healthy person, which structure contains this liquid?



23 The diagram shows muscles and bones in a person's arm.

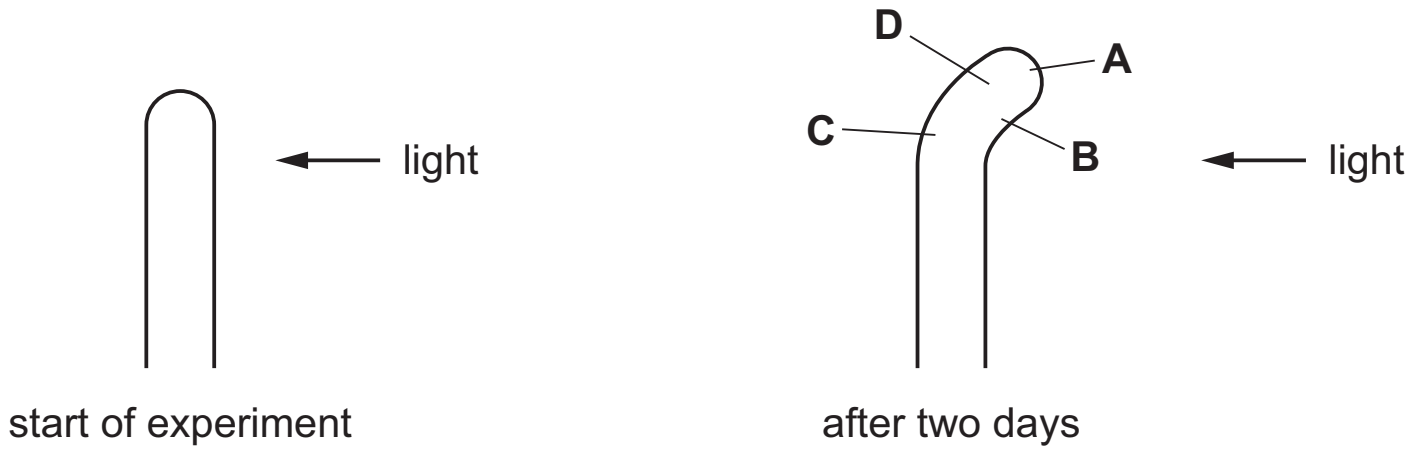


What happens to the muscles as the weight is lowered?

	biceps	triceps
A	lengthens	lengthens
B	lengthens	shortens
C	shortens	lengthens
D	shortens	shortens

24 In an experiment to investigate phototropism, a plant shoot is grown with light coming from one side only.

After two days, in which region has the greatest rate of growth occurred?



25 Which structure is involved in the transfer of dissolved nutrients from the mother to the fetus?

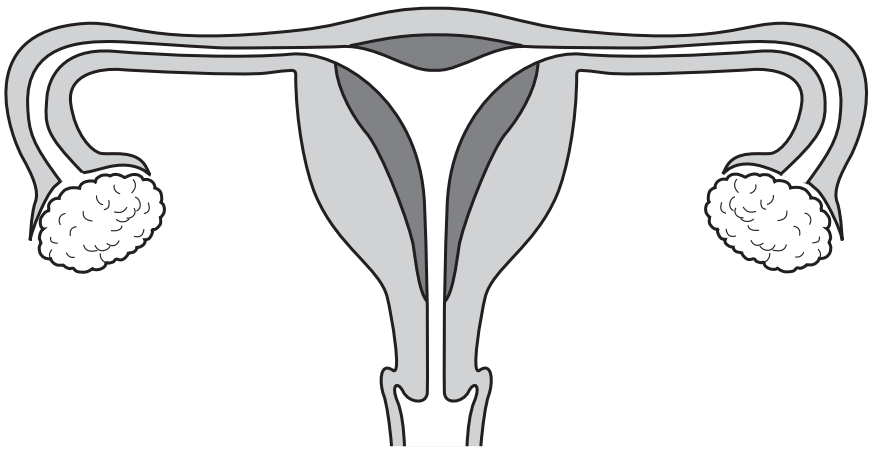
A kidney

B liver

C placenta

D stomach

26 The diagram shows the human female reproductive system.



After ejaculation, along which route does a male gamete travel to fuse with an egg?

A ovary → oviduct → uterus → cervix

B ovary → uterus → cervix → vagina

C vagina → cervix → uterus → oviduct

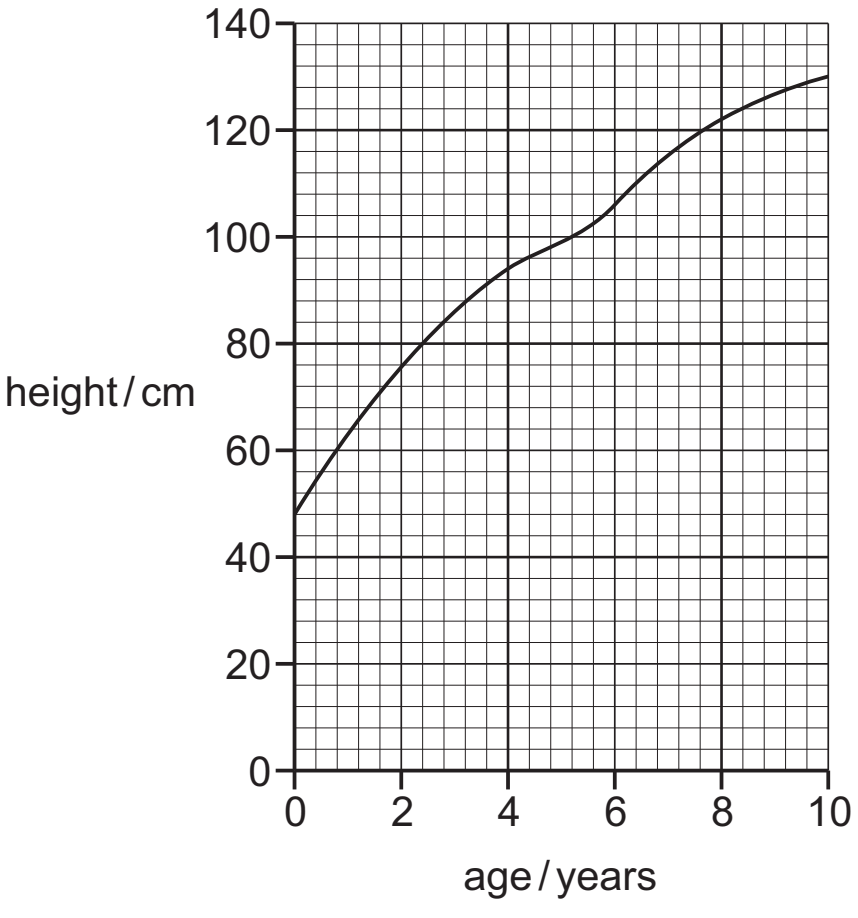
D vagina → uterus → cervix → oviduct

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27 Which set of conditions is required for seed germination?

	oxygen	warmth	water
A	✓	✗	✓
B	✓	✓	✗
C	✗	✓	✓
D	✓	✓	✓

28 The graph shows the height of a child, from birth to the age of 10.



What was the approximate height of the child at 7 years of age?

A 106 cm **B** 116 cm **C** 122 cm **D** 130 cm

29 Which of these cells is haploid?

A liver cell

B red blood cell

C sperm cell

D zygote

30 What results from meiosis of a diploid cell?

A genetically different diploid cells

B genetically different haploid cells

C genetically identical diploid cells

D genetically identical haploid cells

31 Which pathway is taken by energy from the Sun?

A chemical energy in carbohydrates → stored in plants → trapped by chlorophyll

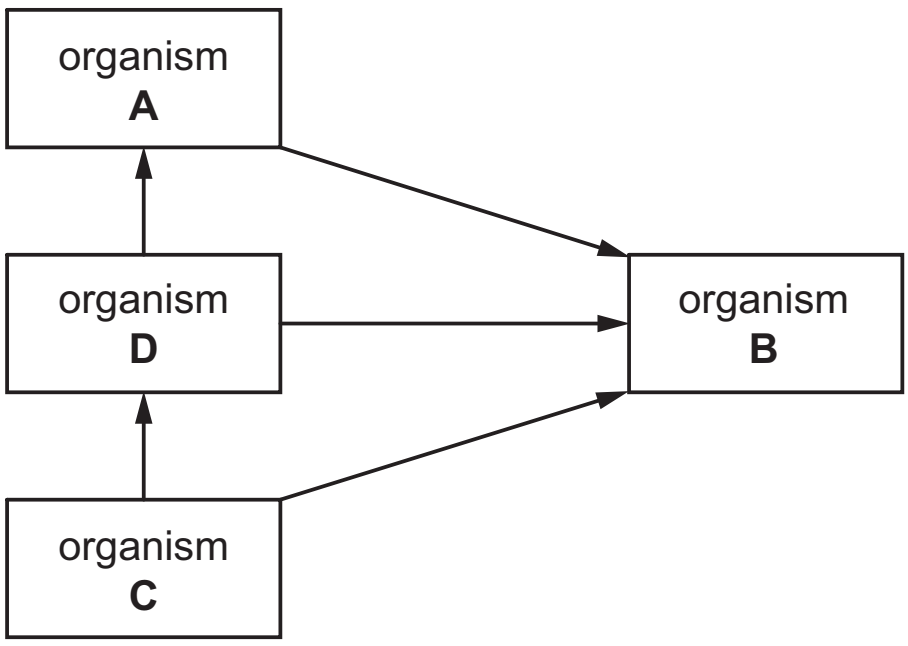
B stored in plants → chemical energy in carbohydrates → trapped by chlorophyll

C stored in plants → trapped by chlorophyll → chemical energy in carbohydrates

D trapped by chlorophyll → chemical energy in carbohydrates → stored in plants

32 The diagram shows a food web including a producer, consumers and a decomposer.

Which organism is the decomposer?



33 The diagram shows a food chain.



If the hawks are removed from this food chain, what is likely to happen to the numbers of the other organisms in this chain?

	greenflies	ladybirds	insect-eating birds
A	decrease	increase	decrease
B	decrease	increase	increase
C	increase	decrease	decrease
D	increase	decrease	increase

34 Which organisms remove carbon dioxide from the atmosphere?

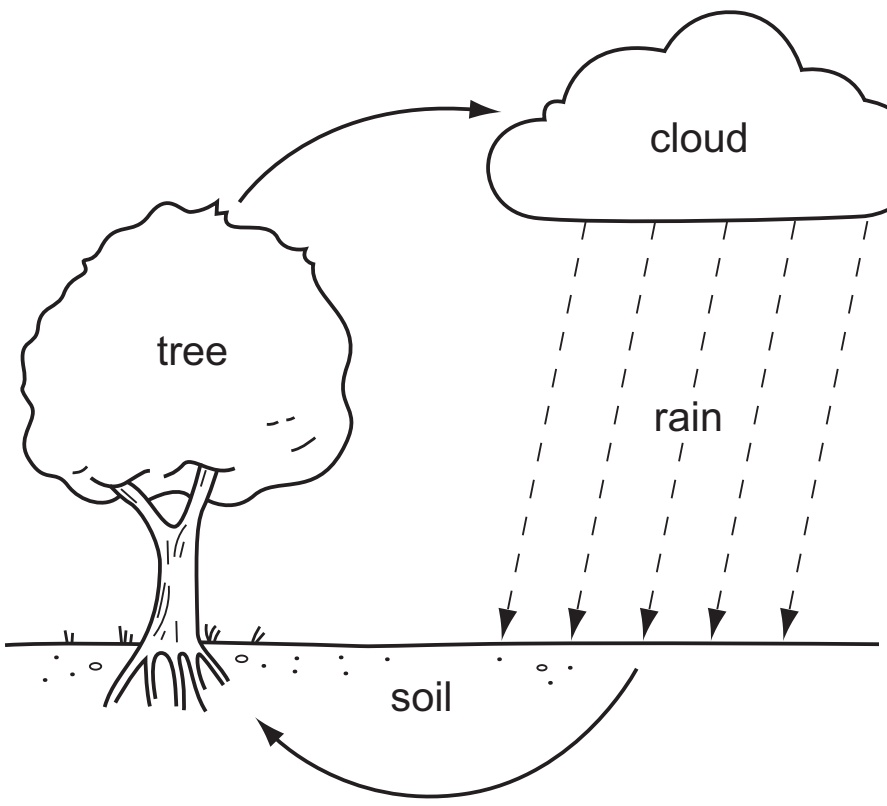
A carnivores

B decomposers

C herbivores

D producers

35 The diagram shows a simple water cycle.



What is responsible for water loss from the tree?

A evaporation

B photosynthesis

C respiration

D translocation

36 Which process is **not** part of the carbon cycle?

A combustion

B photosynthesis

C respiration

D transpiration

37 Which factors affect the rate of growth of a plant population?

	disease	grazing by herbivores	light intensity
A	✓	✓	✓
B	✓	✓	✗
C	✓	✗	✓
D	✗	✓	✓

38 What is a reason for conserving plant species?

A to absorb oxygen from the air

B to decrease rainfall

C to obtain drugs for medicinal use

D to release carbon dioxide into the air

39 What is **reduced** after deforestation?

A force of rain hitting the ground

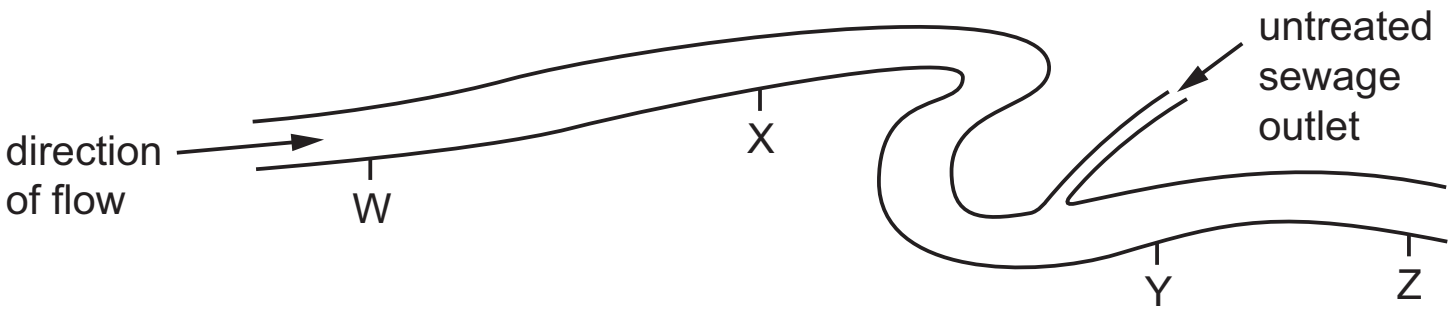
B rainwater run-off

C soil erosion

D soil fertility

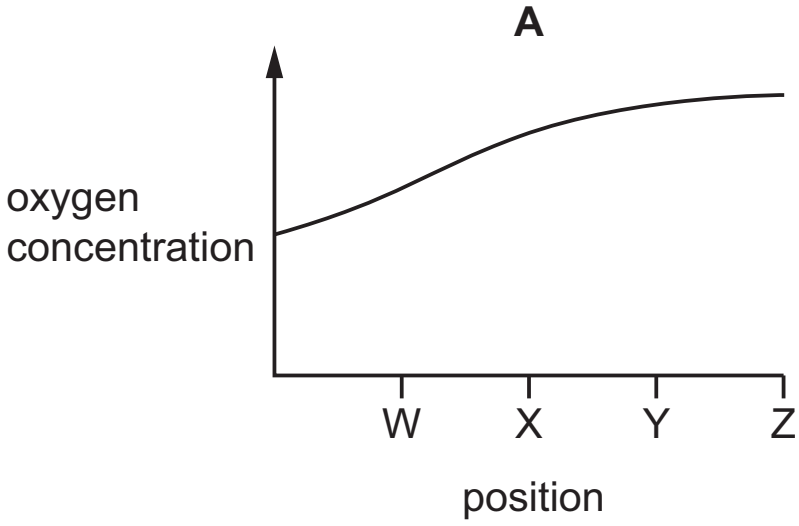
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40 The diagram shows four positions on a river where water samples were taken.

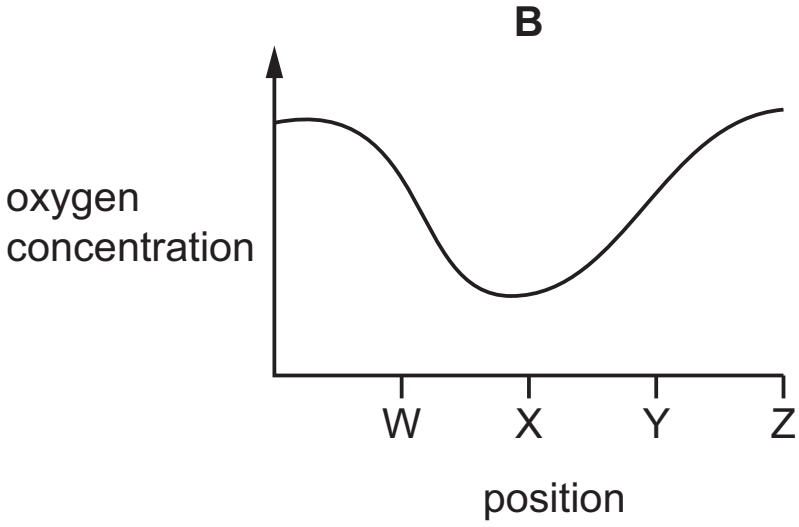


Which graph shows oxygen concentrations in the river?

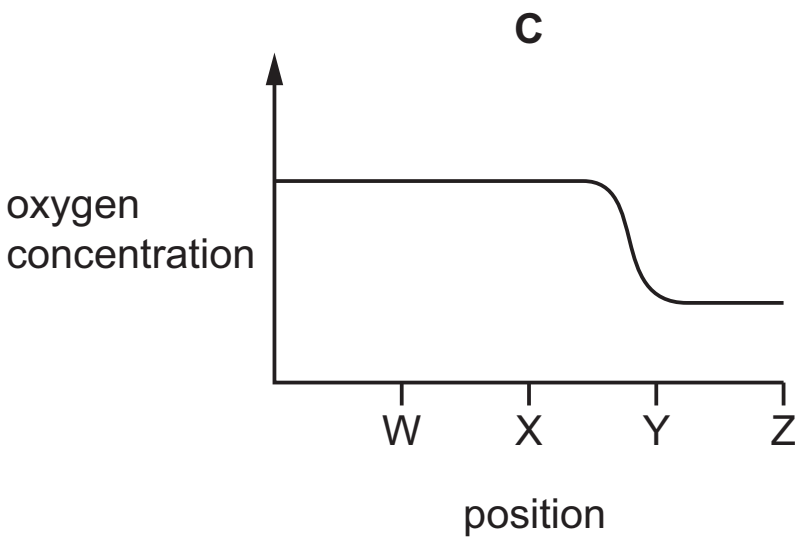
A



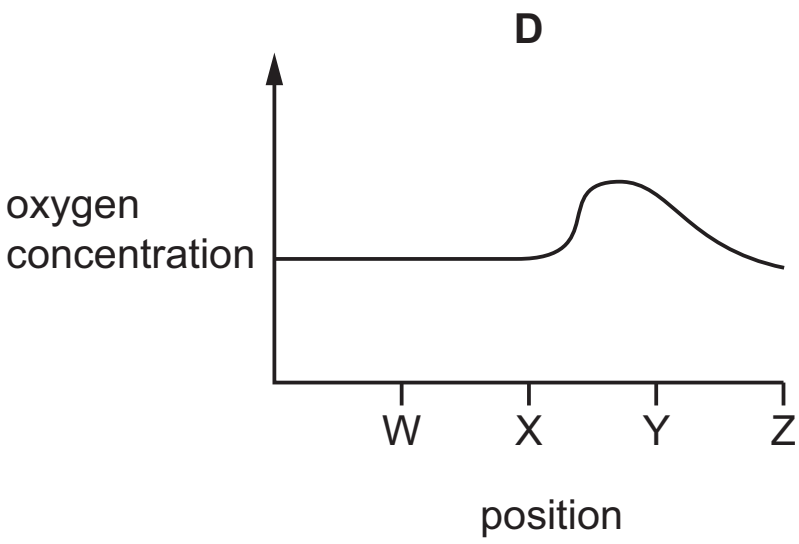
B



C



D



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