Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/12**

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)

MODIFIED LANGUAGE

7524335656

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 **18** printed pages and **2** blank pages.

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1 Some lizards detach their tails when threatened by a predator.

Which characteristic is shown?

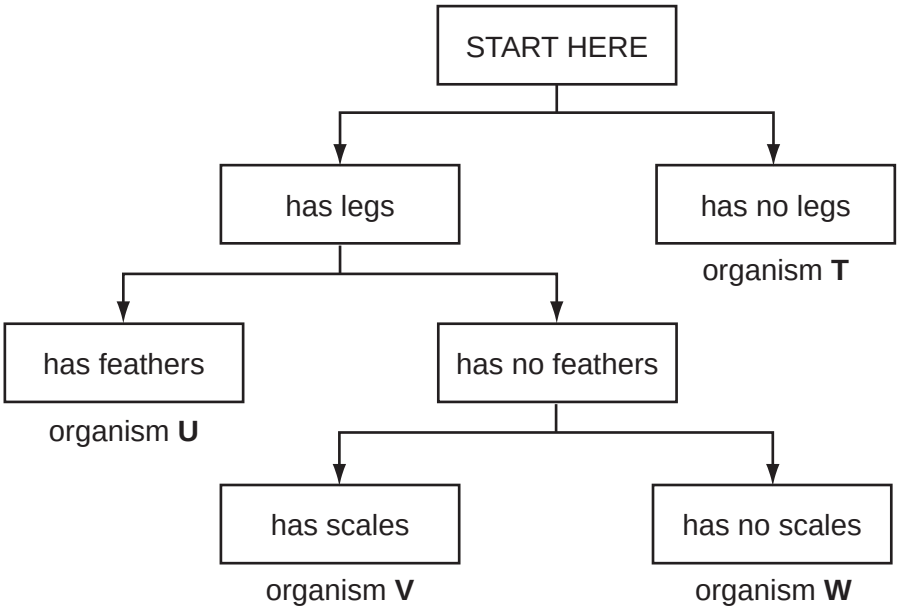
A excretion

B growth

C reproduction

D sensitivity

2 The diagram shows a key for five vertebrates.



Which class of vertebrates does organism **W** belong to?

A amphibians

B birds

C fish

D reptiles

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3 The diagram shows an animal whose scientific name is *Rattus rattus*.



Which genus does it belong to?

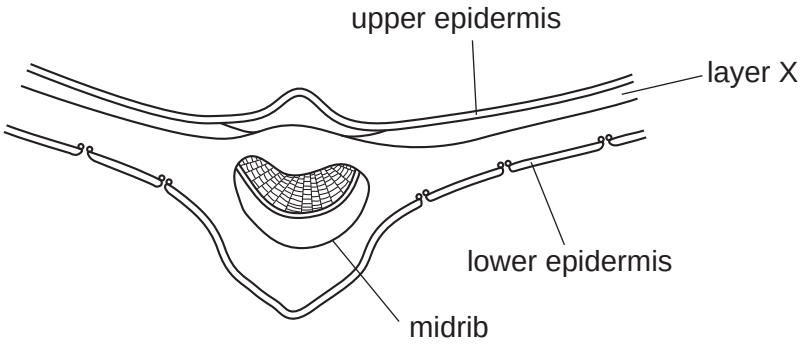
A mammal

B *rattus*

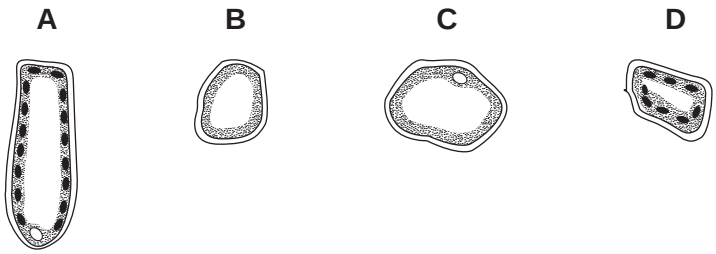
C *Rattus*

D vertebrate

4 The diagram shows a cross-section of part of a leaf.

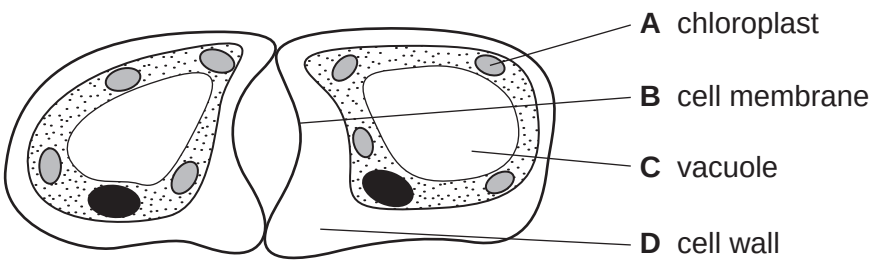


Which type of cell is found in layer X?



5 The diagram shows a student's drawing of two guard cells.

Which label line is **not** correct?



6 How does a liver cell differ from a palisade cell?

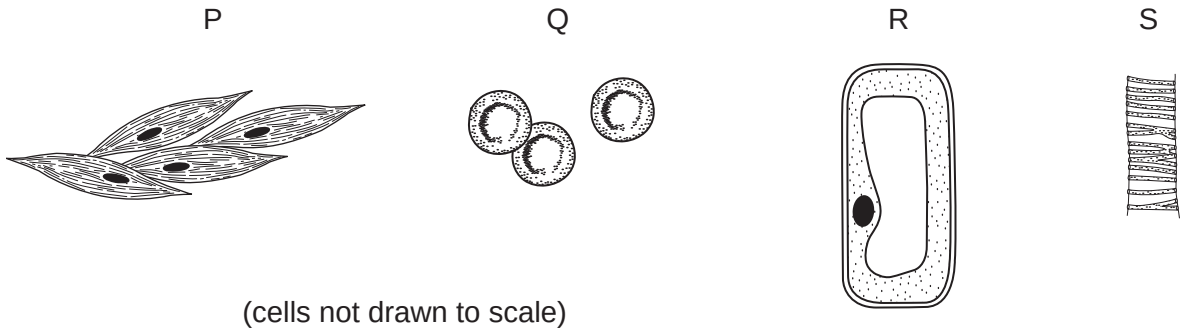
A A liver cell has a membrane.

B A liver cell has a vacuole.

C A liver cell has no cell wall.

D A liver cell has no cytoplasm.

7 The diagram shows structures taken from two different organisms.



(cells not drawn to scale)

Which structures have the main function of transport?

A P and R **B** P and S **C** Q and R **D** Q and S

8 At which level of organisation is a root?

A organ

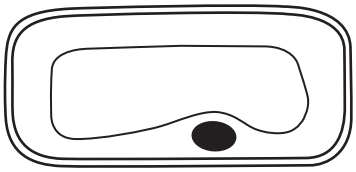
B organ system

C organism

D tissue

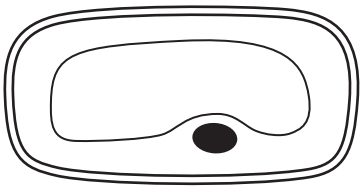
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9 The diagram shows a plant cell.

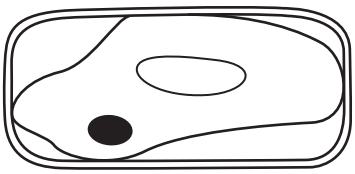


What is the appearance of this cell after it has been placed in pure water for 30 minutes?

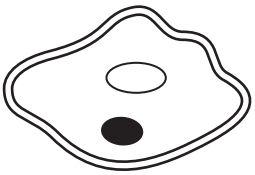
A



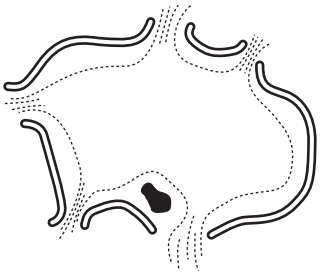
B



C



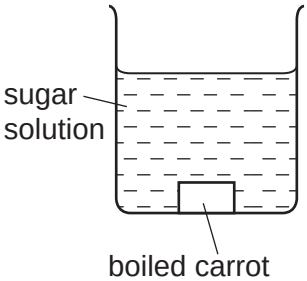
D



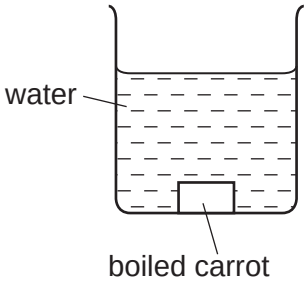
10 A student cuts out four pieces of carrot root of equal size. The pieces are treated as shown in the diagram, and then left for two hours.

After two hours, which piece of carrot will be the smallest?

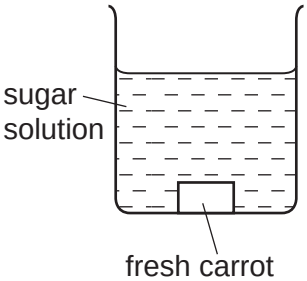
A



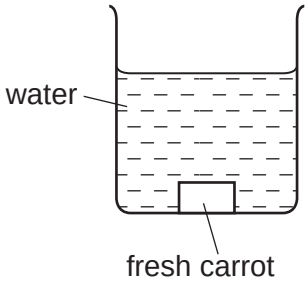
B



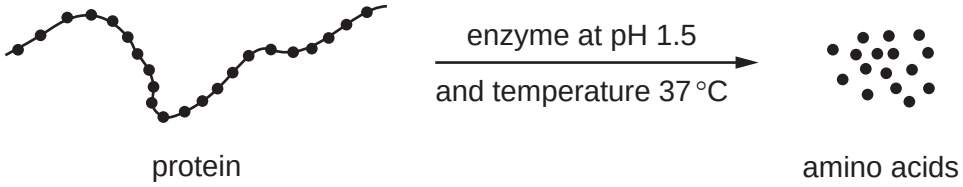
C



D



11 The diagram shows the effect of an enzyme working in the human digestive system.



What would **reduce** the rate of production of amino acids?

A removing the amino acids as they are formed

B increasing the amount of protein

C raising the temperature to 40 °C

D raising the pH to 7.5

12 Which substance catalyses the breakdown of fats to fatty acids and glycerol?

A adrenaline

B alcohol

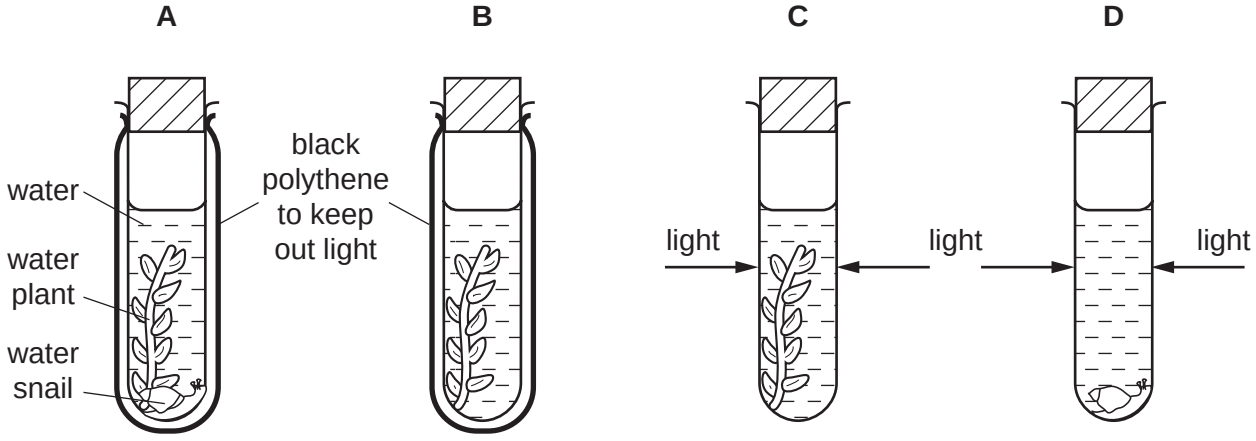
C bile

D lipase

13 An experiment was done using the apparatus shown in the diagram.

The carbon dioxide content of the water in each tube was measured at the start and again three hours later.

In which tube would there be a **decrease** in carbon dioxide content?



14 What is formed first in a leaf as a result of photosynthesis?

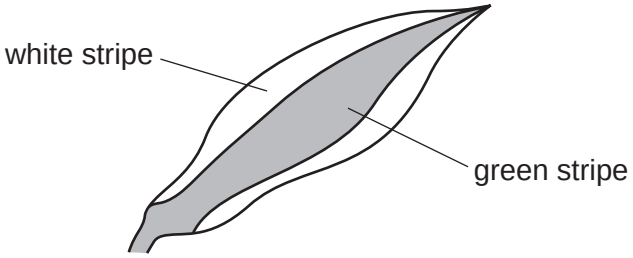
A chlorophyll

B glucose

C starch

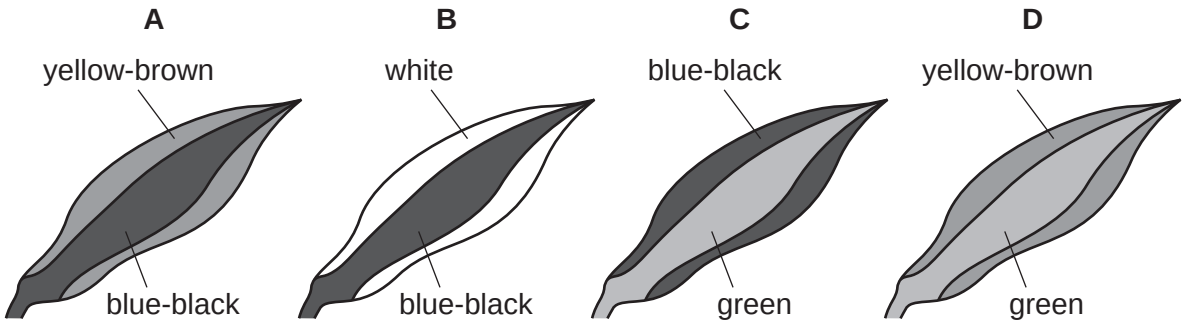
D water

15 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. The leaf was then tested for starch using iodine solution.

Which diagram shows the result of the test?



16 From which part of a leaf does most water evaporate during transpiration?

A the cuticle

B the guard cells

C the spongy mesophyll cells

D the xylem vessels

17 In which order does water pass through the cells of a plant, as the water travels from the roots to a leaf?

A mesophyll cells → root hair → root cortex → xylem

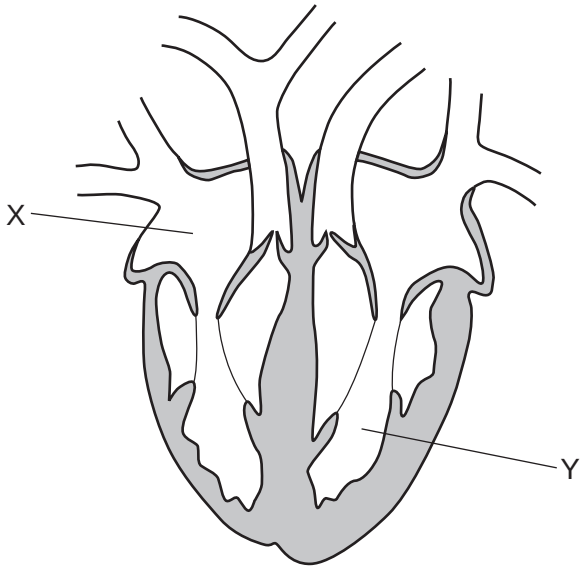
B root cortex → root hair → xylem → mesophyll cells

C root hair → mesophyll cells → root cortex → xylem

D root hair → root cortex → xylem → mesophyll cells

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18 The diagram shows a vertical section through a human heart.

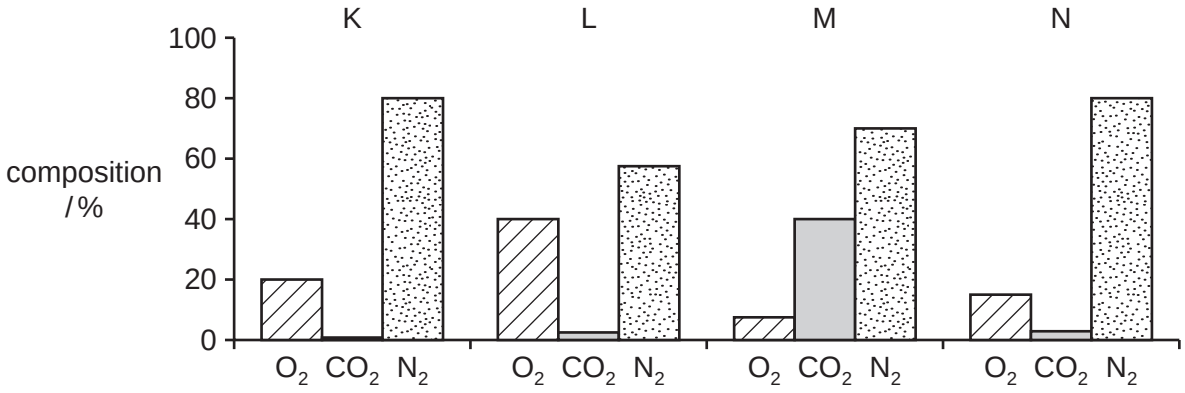


What are X and Y?

	X	Y
A	left atrium	right ventricle
B	left ventricle	right atrium
C	right atrium	left ventricle
D	right ventricle	left atrium

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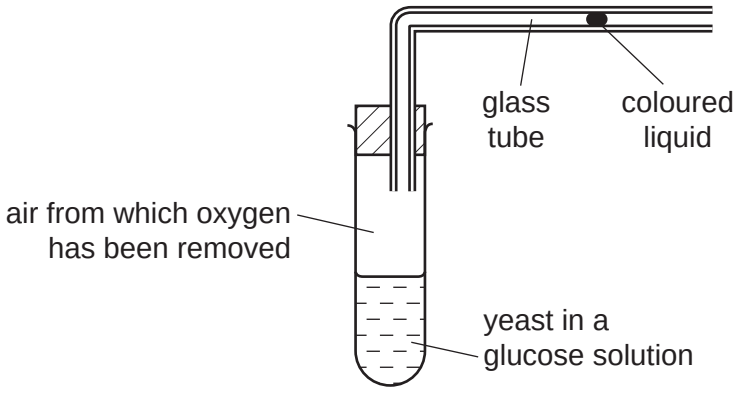
19 The diagram shows the composition of four samples of air (O_2 = oxygen, CO_2 = carbon dioxide, N_2 = nitrogen).



Which sample is inspired air and which sample is expired air?

	inspired air	expired air
A	K	N
B	L	K
C	M	L
D	N	M

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



What happens to the coloured liquid?

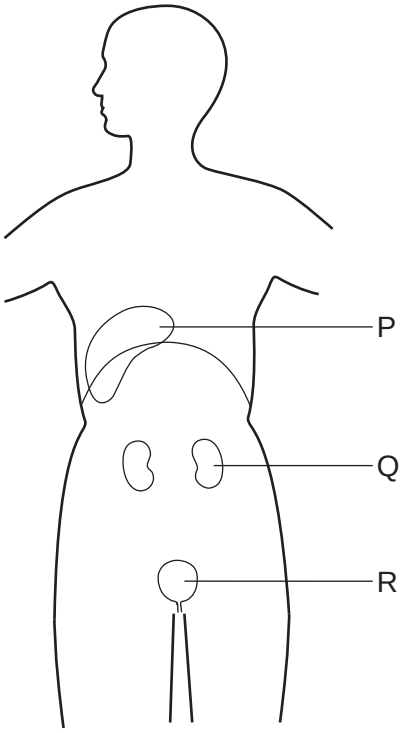
A moves rapidly to the left

B moves slowly to the left

C moves to the right

D stays still

21 The diagram shows some organs in which urea is found.



Which organ makes urea, and which organ removes it from the blood?

	makes urea	removes urea from blood
A	P	Q
B	Q	Q
C	Q	R
D	R	P

22 What is a function of the kidneys of a healthy person?

A break down toxins

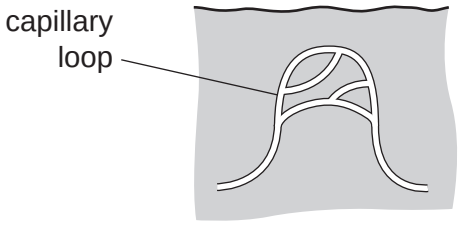
B eliminate all salts

C reabsorb all glucose

D retain all water

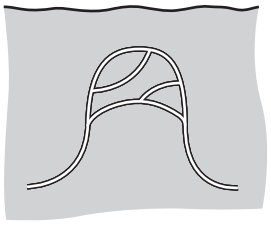
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23 The diagram shows a capillary loop in the skin of a mammal.

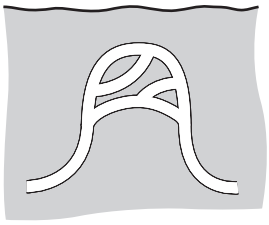


What will the capillary loop look like if the mammal becomes cold?

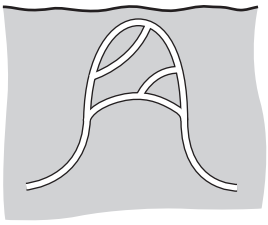
A



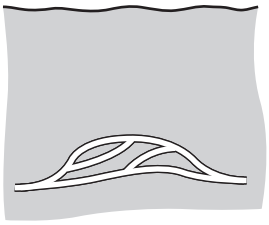
B



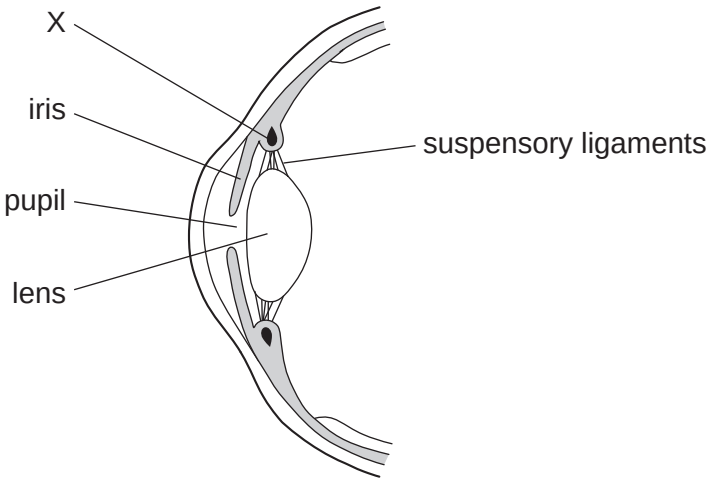
C



D



24 The diagram shows a section through part of the eye.



X is a contracted ciliary muscle.

What will happen when it relaxes?

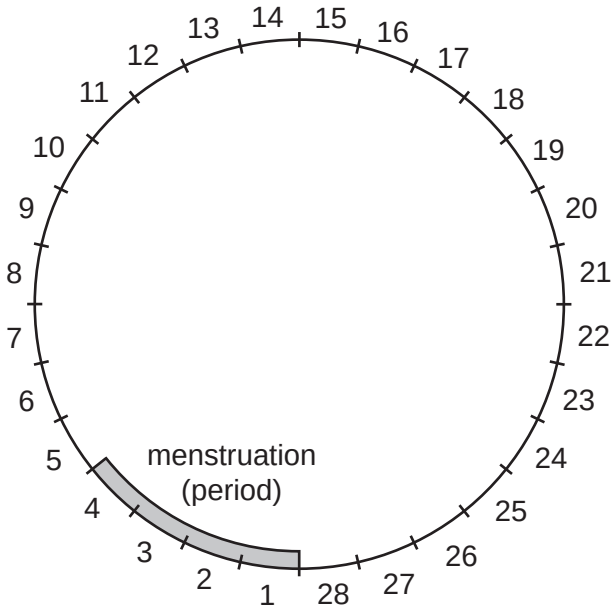
A The lens will decrease its curvature.

B The lens will increase its curvature.

C The size of the pupil will decrease.

D The size of the pupil will increase.

25 The diagram shows a timeline of a woman's menstrual cycle, which lasts for 28 days.



On which days of the menstrual cycle is a woman most likely to become pregnant?

A days 1 - 4

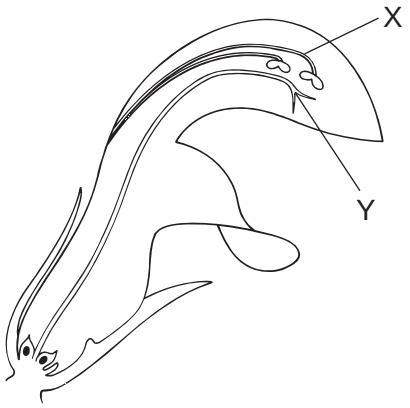
B days 7 - 10

C days 13 - 16

D days 20 - 23

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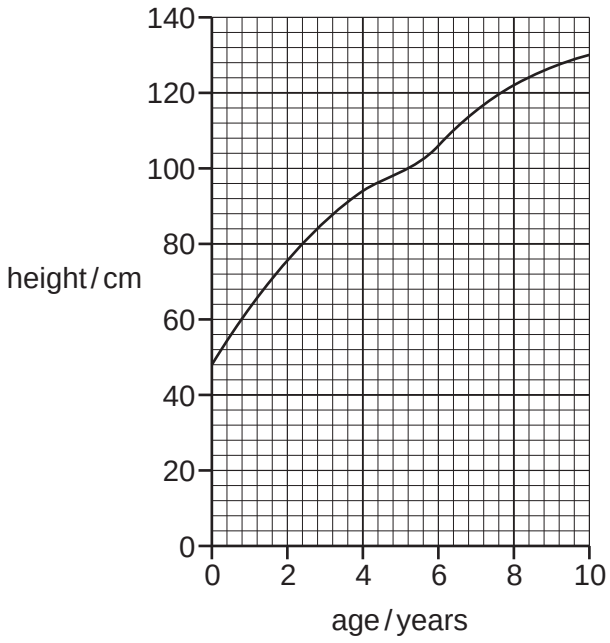
26 The diagram shows a vertical section through a flower.



What are X and Y?

	X	Y
A	anther	stigma
B	anther	style
C	stamen	stigma
D	stamen	style

27 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

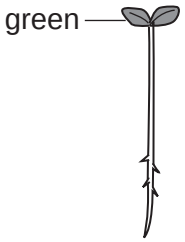
28 Four samples of seeds germinated in different conditions of temperature and light, as shown in the table.

sample	temperature / °C	light
1	20	absent
2	20	present
3	5	absent
4	5	present

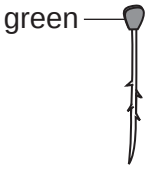
A typical seedling from each sample was removed after seven days.

Which seedling was from sample 2?

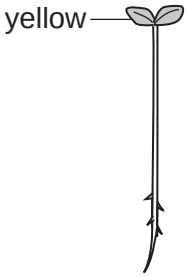
A



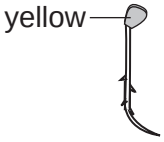
B



C



D



29 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

30 What will be the genotypes of the offspring resulting from a genetic cross between two individuals, one of which is homozygous dominant, (TT), and the other heterozygous?

A all Tt

B 50% TT, 50% tt

C 50% TT, 50%Tt

D 25%TT, 50% Tt, 25% tt

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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 chain.

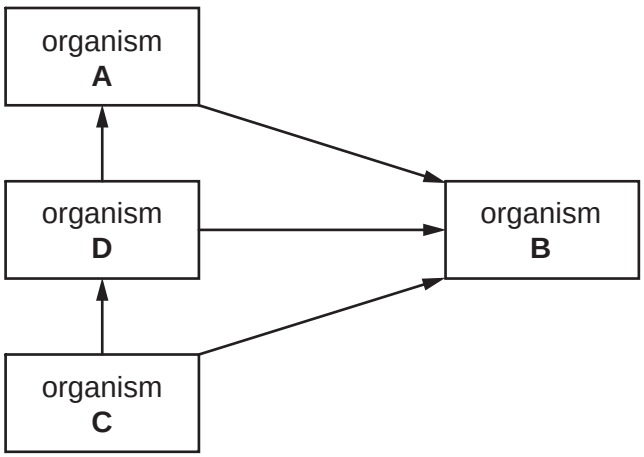


If the hawks are removed from this food chain, what is likely to happen to the numbers of the other organisms in this chain?

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

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

Which organism is the decomposer?



34 Which organisms remove carbon dioxide from the atmosphere?

A carnivores

B decomposers

C herbivores

D producers

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

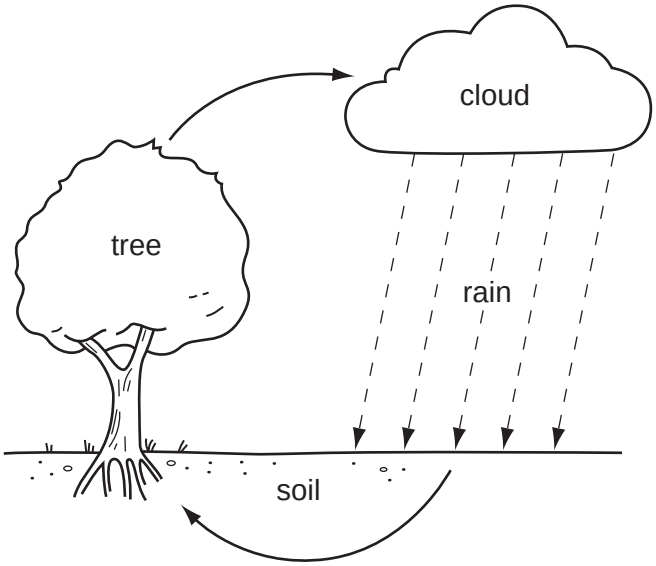
A combustion

B photosynthesis

C respiration

D transpiration

36 The diagram shows a simple water cycle.



What is responsible for water loss from the tree?

A evaporation

B photosynthesis

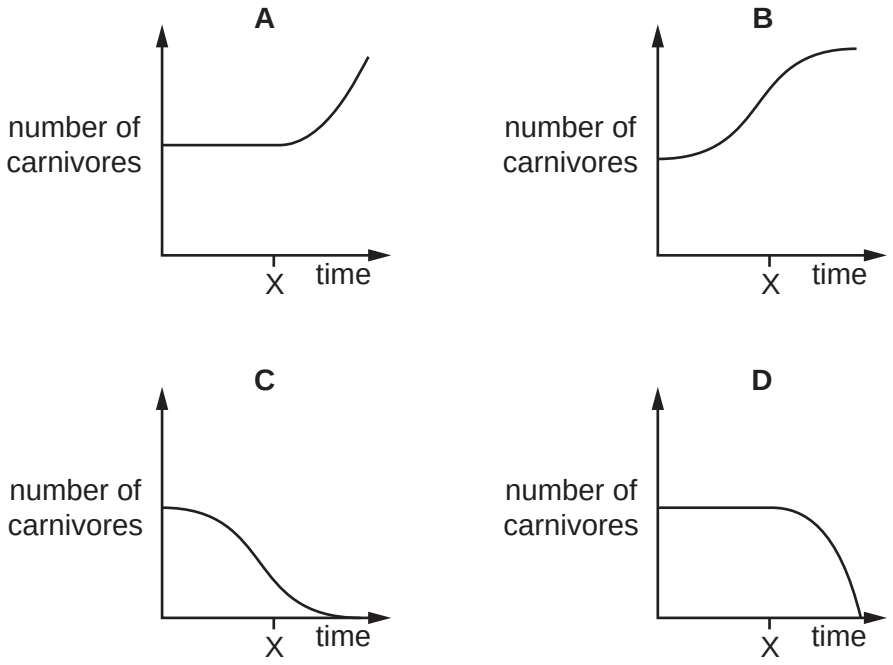
C respiration

D translocation

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37 The graphs show the number of carnivores in a habitat over a period of time. At time X the herbivores in their food chain are removed from the habitat.

Which graph shows the effect of this on the number of carnivores?



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

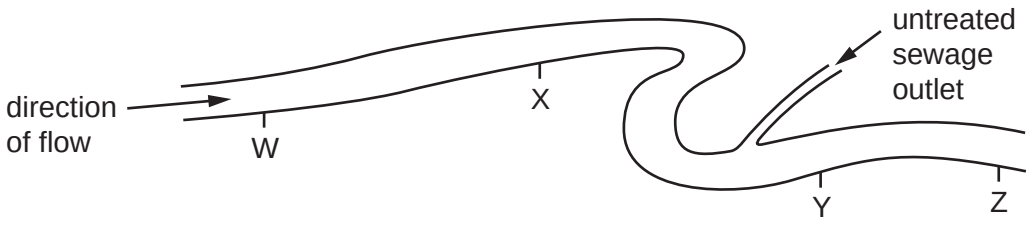
C soil erosion

D soil fertility

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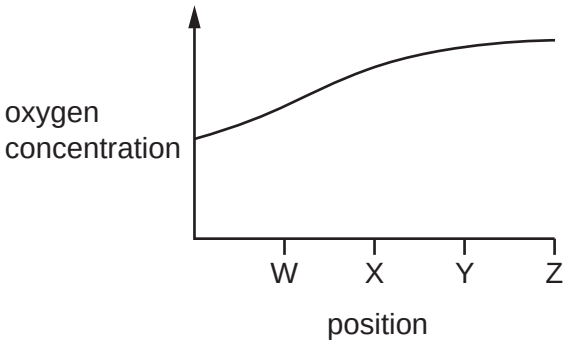
[Turn over

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

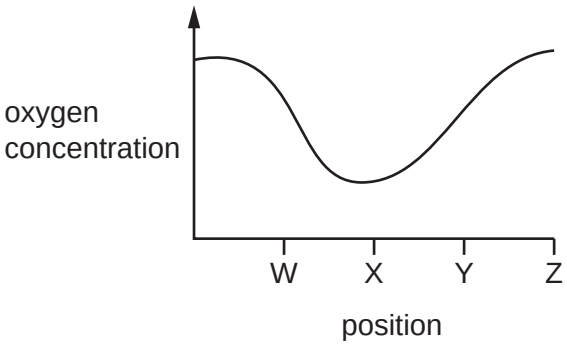


Which graph shows oxygen concentrations in the river?

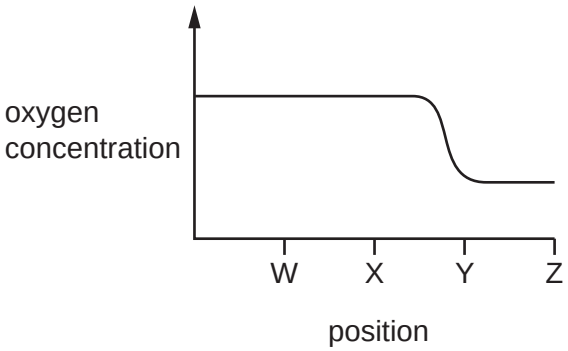
A



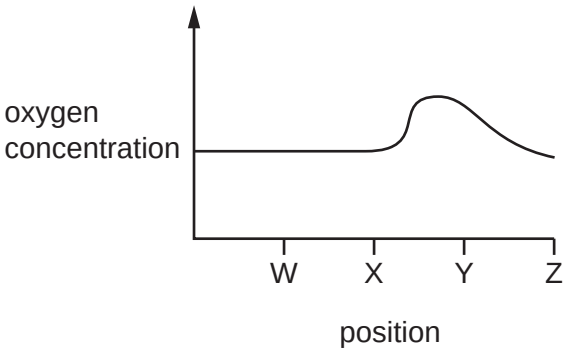
B



C



D



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