Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/13**

Paper 1 Multiple Choice (Core) **May/June 2017**

45 minutes

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

* 3 0 8 8 3 4 1 6 9 8 *

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 **16** printed pages.

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1 Which characteristic do **all** living organisms show?

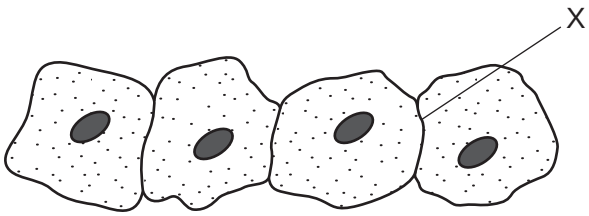
A breathing

B excretion

C photosynthesis

D tropism

2 The diagram shows some animal cells, as seen under the microscope.



What will be present at X?

A one cell membrane

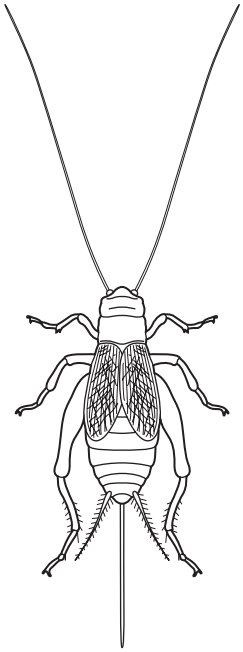
B one cell wall

C two cell membranes

D two cell walls

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3 The diagram shows an animal.



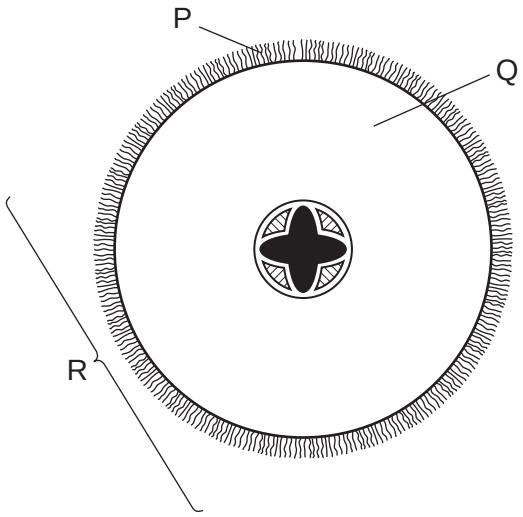
Use the key to identify the animal in the diagram.

1	has six jointed legs	go to 2
	has eight jointed legs	go to 3
2	has antennae longer than its body	**B** *Gryllus*
	has antennae shorter than its body	**C** *Musca*
3	has stripes on its legs	**A** *Araneus*
	has no stripes on its legs	**D** *Pisaurina*

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[Turn over

4 The diagram shows a section through a root.



What are the levels of organisation of the labelled structures?

	cell	organ	tissue
A	P	Q	R
B	P	R	Q
C	Q	R	P
D	R	Q	P

5 Which characteristics are correct for **both** osmosis and diffusion?

	require a partially permeable membrane	require a concentration gradient	are energy consuming processes
A	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✗
D	✗	✗	✓

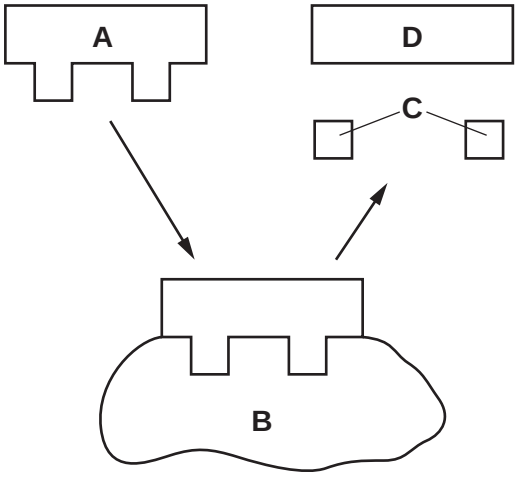
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6 What is the correct test for protein?

	name of test	heat	colour change
A	Benedict's	yes	blue to red
B	biuret	yes	remains blue
C	biuret	no	blue to purple
D	emulsion	no	appearance of a white emulsion

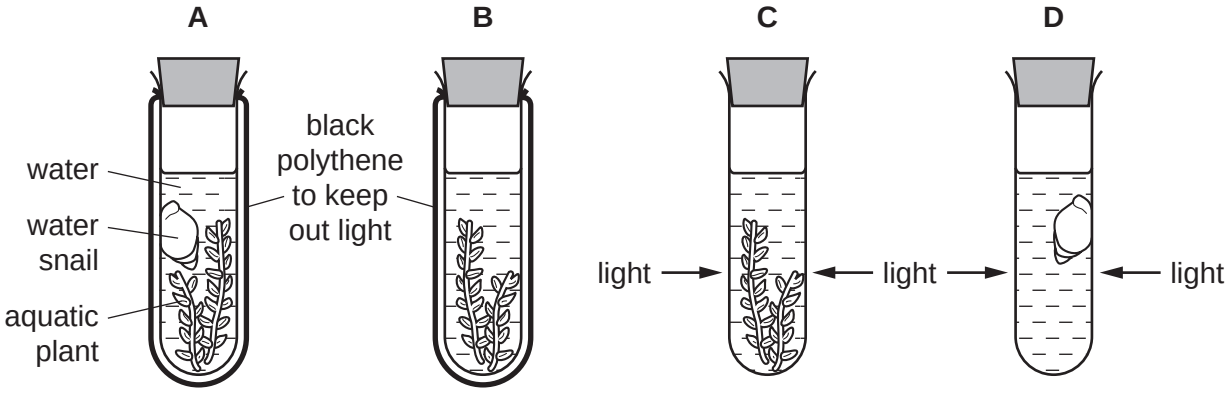
7 The diagram represents an enzyme-controlled reaction.

What represents the enzyme?



8 Four test-tubes are set up as shown.

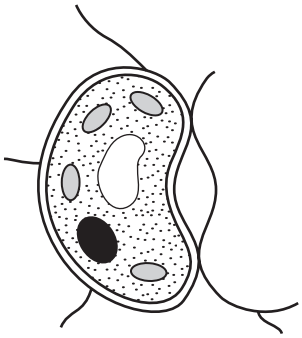
Which test-tube contains the most carbon dioxide after one hour?



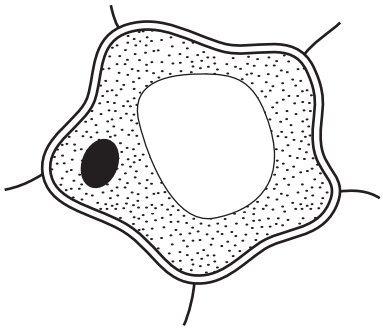
9 The diagrams show the structure of four different cells from the leaf of a dicotyledonous plant.

Which cell is a guard cell?

A

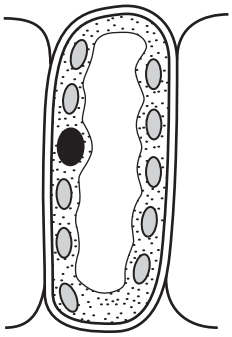


B

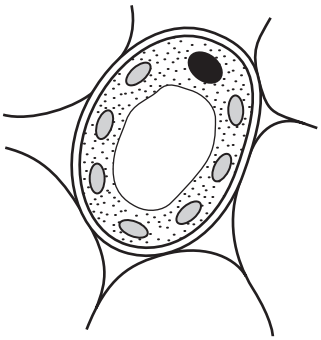


NOT TO SCALE

C



D



10 Which mineral ion is absorbed by plant roots and used in the production of all amino acids?

A carbonate

B hydroxide

C magnesium

D nitrate

11 What is the pathway taken by water as it travels through a plant?

A mesophyll cells → xylem → root cortex cells → root hair cells

B root cortex cells → root hair cells → mesophyll cells → xylem

C root hair cells → root cortex cells → xylem → mesophyll cells

D xylem cells → mesophyll → root cortex cells → root hair cells

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12 Which is the main source of fibre in a human diet?

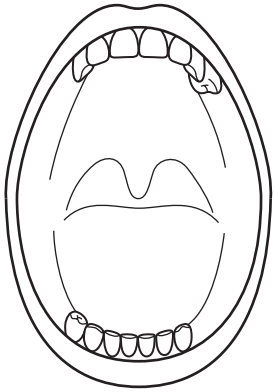
A dairy products

B meat products

C plant material

D water

13 The diagram shows a person's teeth. Some of their teeth are missing.



What would the person find difficult?

A biting apples

B drinking water

C grinding meat

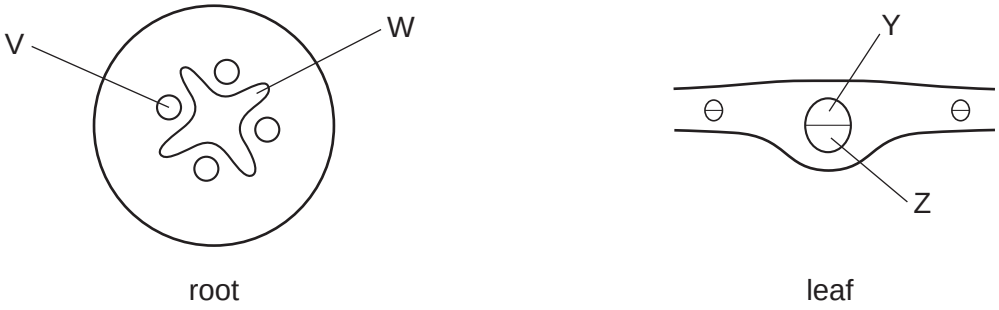
D tearing dry bread

14 What are functions of the hydrochloric acid in gastric juice?

	giving the optimum pH for gastric enzymes	killing bacteria
A	✓	✓
B	✓	✗
C	✗	✓
D	✗	✗

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15 The diagrams show transverse sections through a root and a leaf.

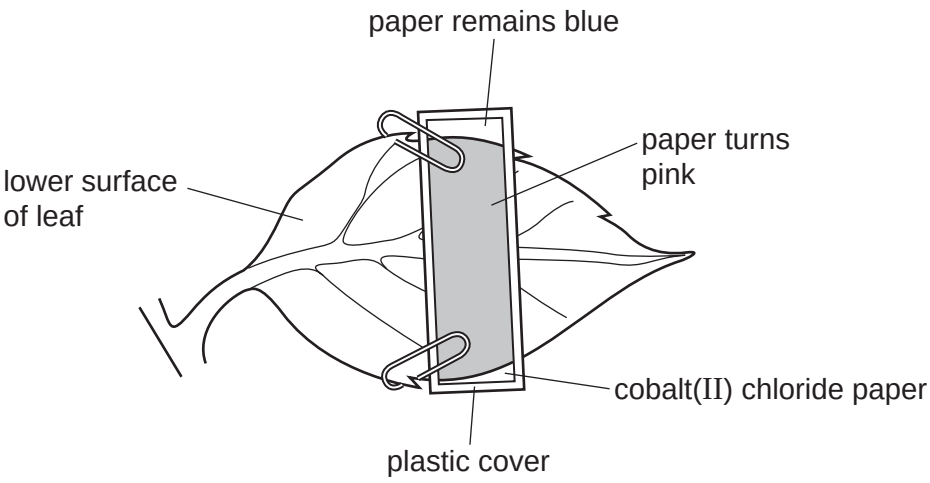


Which correctly identifies the phloem?

A V and Y **B** V and Z **C** W and Y **D** W and Z

16 A piece of blue cobalt(II) chloride paper is clipped to the lower surface of a fresh leaf and is then covered with plastic, as shown.

After a few minutes, part of the paper turns pink, showing that water is present.



Which process carried out by leaves causes the paper to turn pink?

A absorption

B photosynthesis

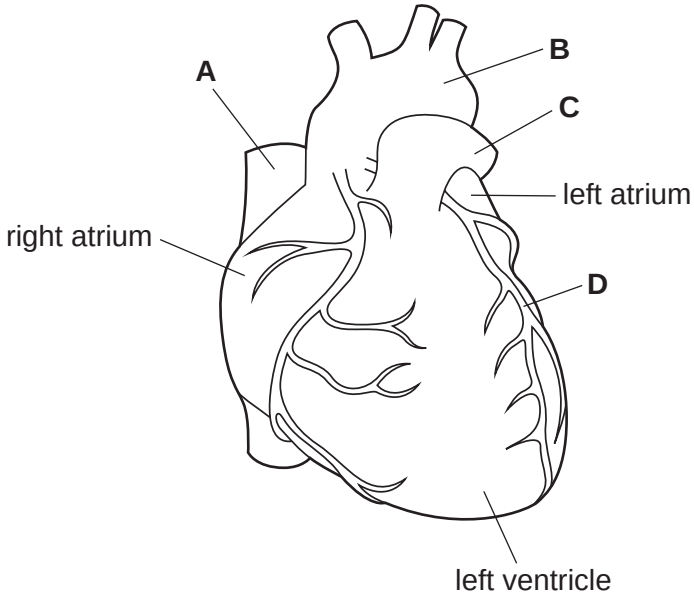
C respiration

D transpiration

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17 The diagram shows the outside of a human heart.

Which is a coronary artery?



18 Which of the blood vessels transporting these substances is an artery?

A carbon dioxide from the body to the heart

B carbon dioxide from the heart to the lungs

C oxygen from the lungs to the left atrium

D urea from the kidney to the vena cava

19 Which body defence is a chemical barrier?

A antibody production

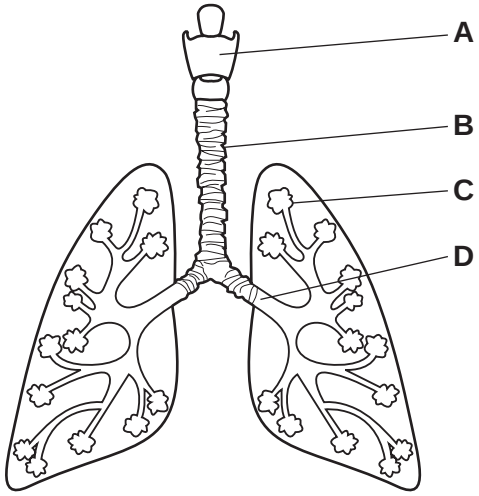
B hairs in the nose

C mucus lining the airways

D skin

20 The diagram shows part of the human gas exchange system.

Where does the exchange of gases between air and blood take place?



21 Which equation represents anaerobic respiration in humans?

A glucose → lactic acid

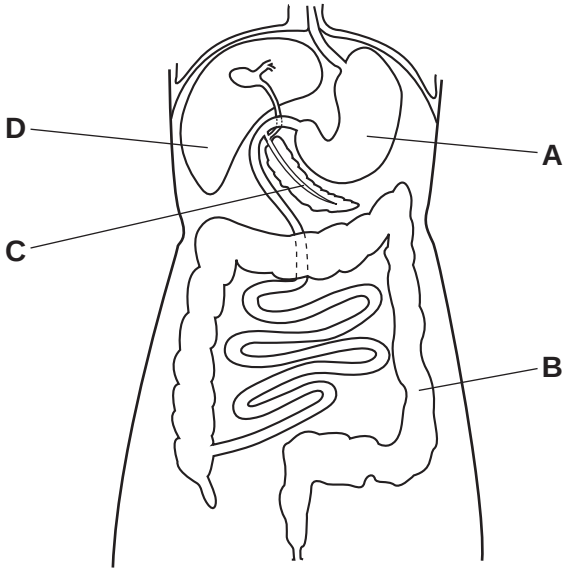
B glucose → lactic acid + carbon dioxide

C glucose + oxygen → lactic acid

D glucose + oxygen → lactic acid + carbon dioxide

22 The diagram shows some organs in the human body.

In which part are amino acids broken down to form urea?



23 Which is the light sensitive part of the eye?

A cornea

B iris

C lens

D retina

24 Which response occurs when body temperature rises?

A contraction of hair erector muscles

B increased production of urine

C increased shivering

D increased sweating

25 What is meant by the term *phototropism*?

A absorbing mineral ions using light energy

B directional growth in response to gravity

C directional growth in response to light

D making food using light energy

26 Which row shows the effects of excessive alcohol consumption?

	reaction time	self-control	anti-social behaviour
A	quicker	increased	increased
B	quicker	reduced	increased
C	slower	increased	decreased
D	slower	reduced	increased

27 Which statement applies to sexual reproduction?

A Offspring are genetically identical to the parent.

B Offspring are not produced from gametes.

C Offspring develop from a zygote.

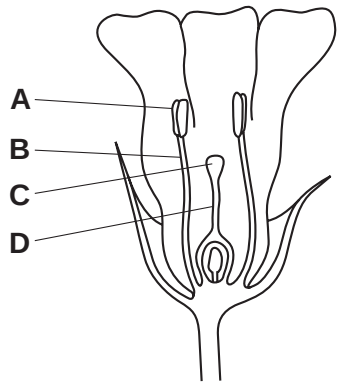
D Offspring develop from one gamete.

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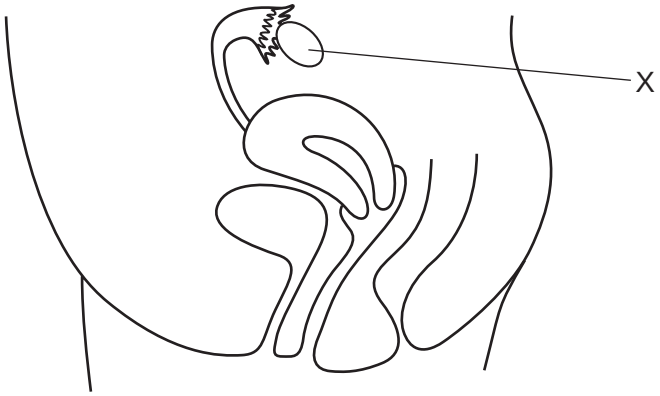
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28 The diagram shows half a flower.

Which structure is the stigma?



29 The diagram shows the human female reproductive system.



What is structure X?

A ovary

B oviduct

C uterus

D vagina

30 Which is a barrier method of birth control?

A abstinence from sex

B monitoring body temperature

C monitoring cervical mucus

D using a femidom

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31 What do genes code for?

A fats

B proteins

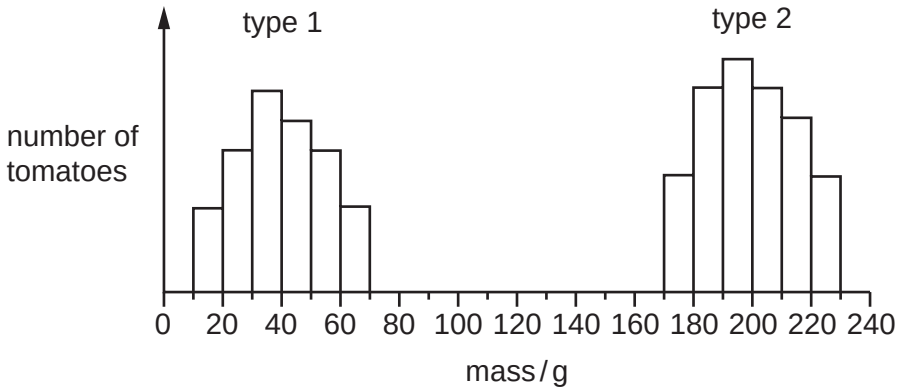
C starch

D sugars

32 What are the uses of meiosis and mitosis?

	asexual reproduction	growth	sexual reproduction
A	meiosis	meiosis	meiosis
B	meiosis	meiosis	mitosis
C	mitosis	meiosis	meiosis
D	mitosis	mitosis	meiosis

33 The graph shows the masses of two different types of tomato.



What can be concluded from the graph?

A Genes do not affect the mass of tomatoes.

B Type 1 tomatoes show continuous variation.

C Type 2 tomatoes are sometimes smaller than type 1 tomatoes.

D Type 2 tomatoes show discontinuous variation.

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34 Large areas of forest are cut down in order to clear the land for other uses.

Which effect does this have on the atmosphere?

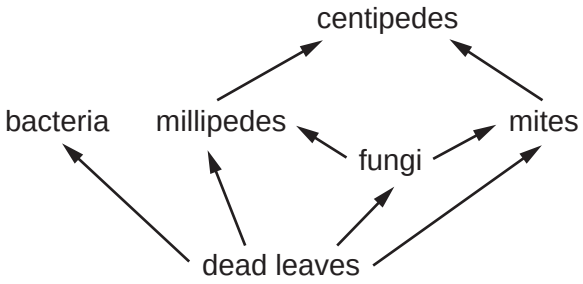
A Carbon dioxide decreases.

B Carbon dioxide increases.

C Oxygen increases.

D Water vapour increases.

35 The diagram shows part of a food web in a pile of dead leaves.

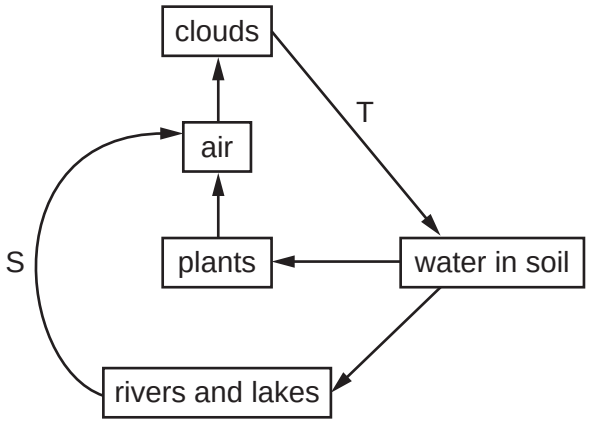


Which terms describe the organisms in the table?

	bacteria	centipedes	leaves
A	consumers	herbivores	producers
B	decomposers	carnivores	decomposers
C	decomposers	consumers	producers
D	producers	carnivores	producers

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36 The diagram shows part of the water cycle.

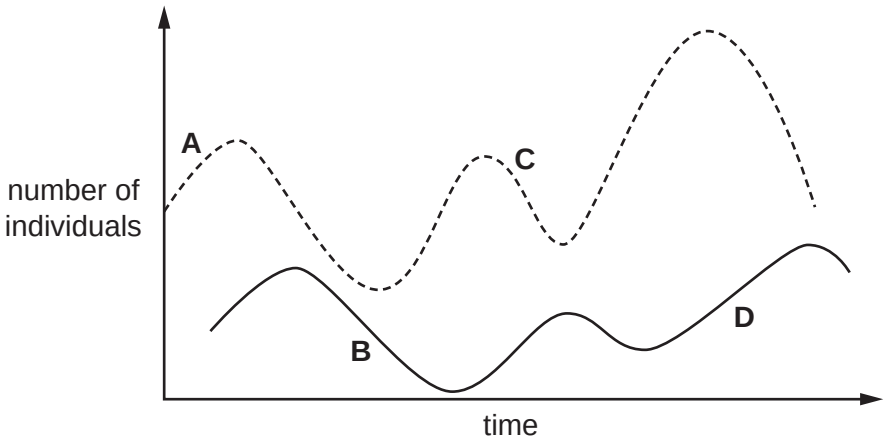


What are processes S and T?

	S	T
A	condensation	drainage
B	condensation	evaporation
C	evaporation	precipitation
D	evaporation	transpiration

37 The graph shows the changes in the populations of predator and prey over a period of time.

Which point on the graph shows a decrease in predator population?



38 Which is an example of genetic engineering?

A altering the DNA in crop plants so they are resistant to herbicides

B only breeding from crop plants that are resistant to insect pests

C production of insulin in the pancreas

D using yeast to produce ethanol for biofuels

39 Why is yeast used in breadmaking?

A to produce alcohol

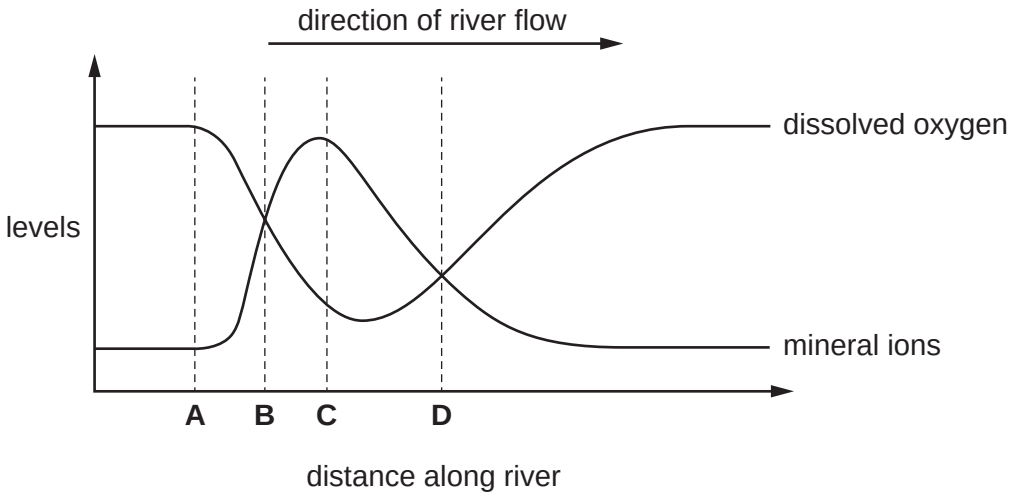
B to produce carbon dioxide

C to use up oxygen

D to use up sugar

40 The graph shows the levels of dissolved oxygen and mineral ions in a river.

At which point does raw sewage enter the river?



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