Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/12**

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)

4381318949

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?

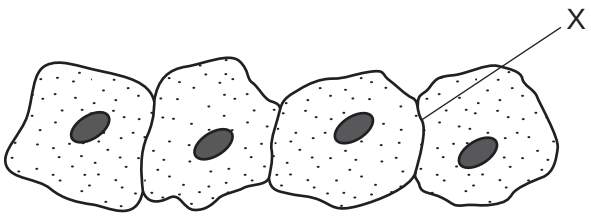
A breathing

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

3 What is a characteristic of both insects and arachnids?

A eight legs

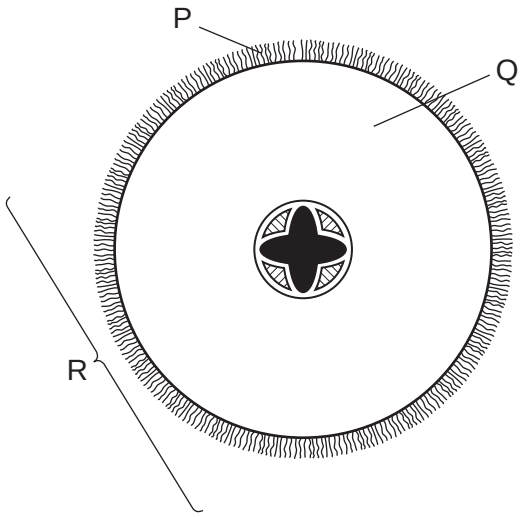
B exoskeleton

C three pairs of legs

D wings

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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	✗	✗	✓

6 Which substances are made by linking together glucose molecules only?

A cellulose, glycogen and starch

B fats, cellulose and proteins

C proteins, oils and glycogen

D starch, fats and oils

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[Turn over

7 Which statement about enzymes is correct?

A Enzymes are carbohydrates.

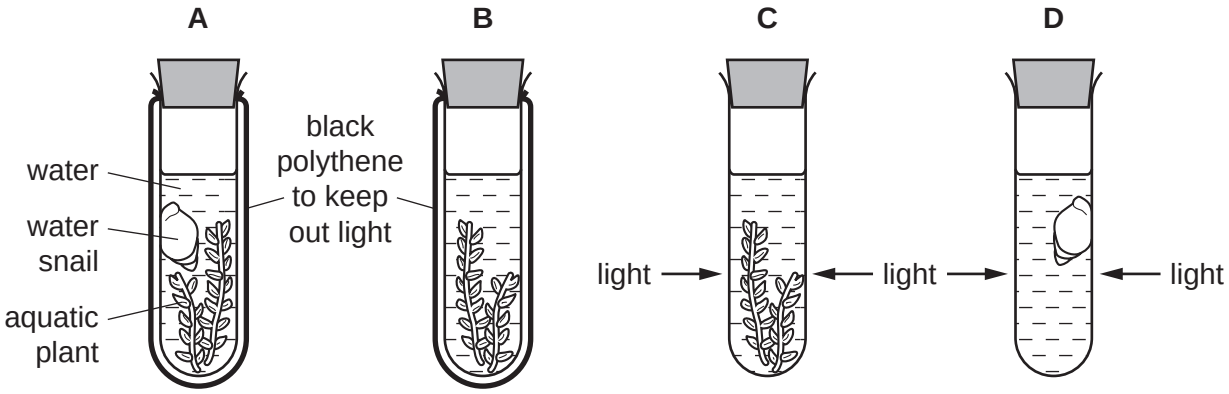
B Enzymes are catalysts.

C Enzymes are living organisms.

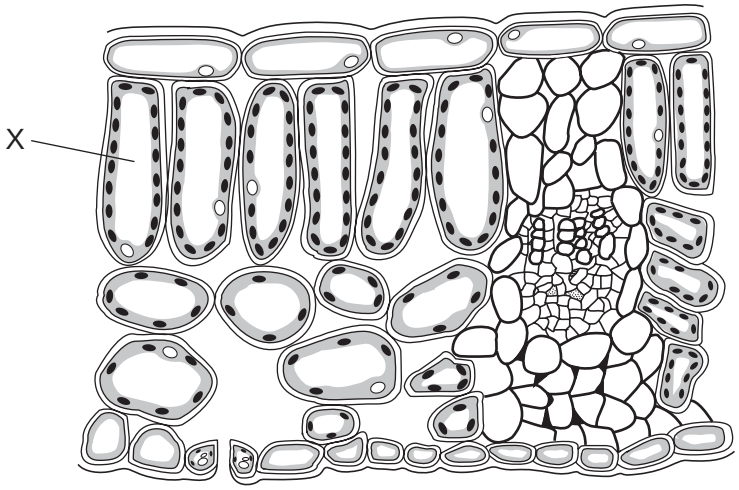
D Enzymes are the same shape as the substrate.

8 Four test-tubes are set up as shown.

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



9 The diagram shows a cross-section through a leaf.



What is the cell labelled X?

A epidermis

B guard cell

C palisade mesophyll

D spongy mesophyll

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10 The nutrient ions present in four different soils are shown.

Which soil would be best for growing healthy, green plants?

	nitrate ions	magnesium ions
A	absent	absent
B	absent	present
C	present	absent
D	present	present

11 Which occurs during digestion?

A fat $\xrightarrow{\text{protease}}$ fatty acids + glycerol

B proteins $\xrightarrow{\text{lipase}}$ simple sugars

C starch $\xrightarrow{\text{amylase}}$ amino acids

D starch $\xrightarrow{\text{amylase}}$ simple sugars

12 By which process does water escape from stomata in the leaves?

A active transport

B diffusion

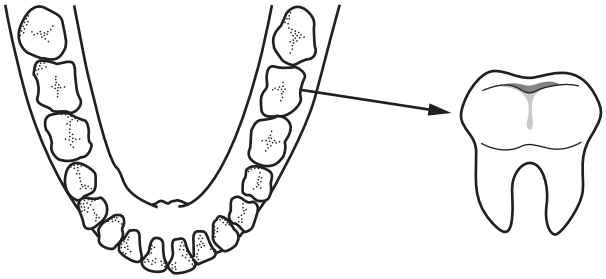
C evaporation

D osmosis

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[Turn over

13 Which type of tooth does the diagram show?



A canine

B incisor

C molar

D premolar

14 Which statement describes assimilation?

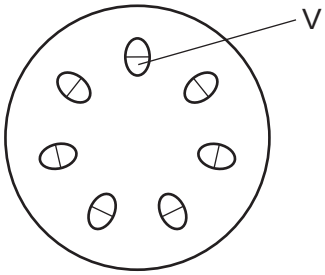
A the breakdown of large, insoluble molecules into small soluble molecules

B the movement of small soluble molecules through the wall of the intestine into the blood

C the movement of small soluble molecules into the cells of the body, where they are used, becoming part of the cells

D the taking of substances into the body through the mouth

15 The diagram shows a cross-section of a plant stem.



What is the function of the tissue labelled V?

A transporting dissolved nutrients and mineral ions

B transporting dissolved nutrients only

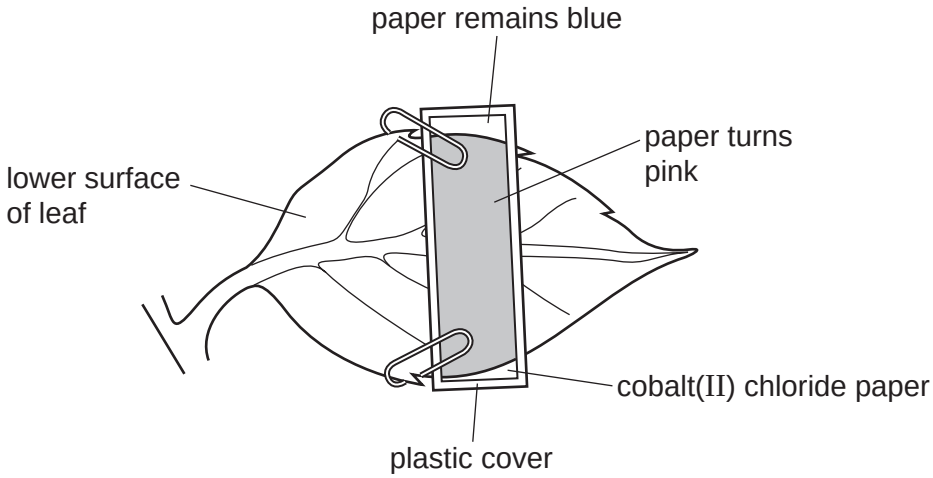
C transporting water and mineral ions

D transporting water only

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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

17 Which chamber of the heart has the most muscular wall?

A left atrium

B left ventricle

C right atrium

D right ventricle

18 Which component of the blood carries the most oxygen?

A plasma

B platelets

C red blood cells

D white blood cells

19 Which is a function of some white blood cells?

A to carry glucose

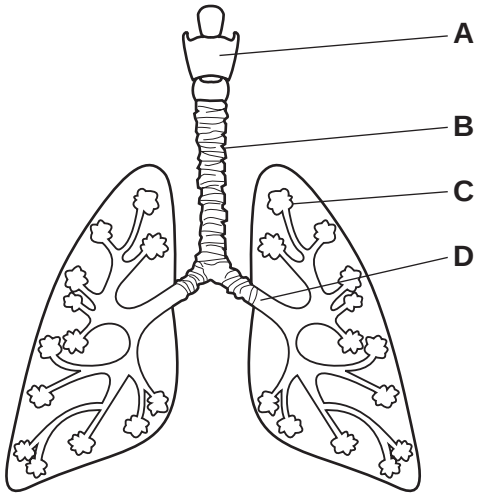
B to carry oxygen

C to produce antibiotics

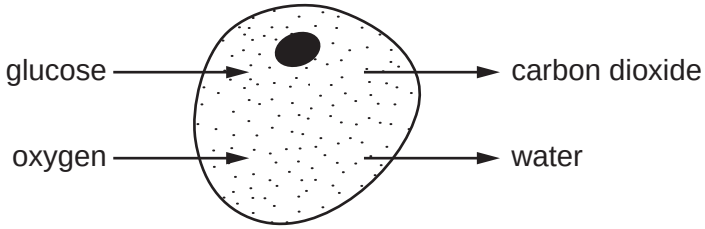
D to produce antibodies

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

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



21 The diagram shows substances moving into and out of a living cell.



Which process is taking place in this cell?

A aerobic respiration

B anaerobic respiration

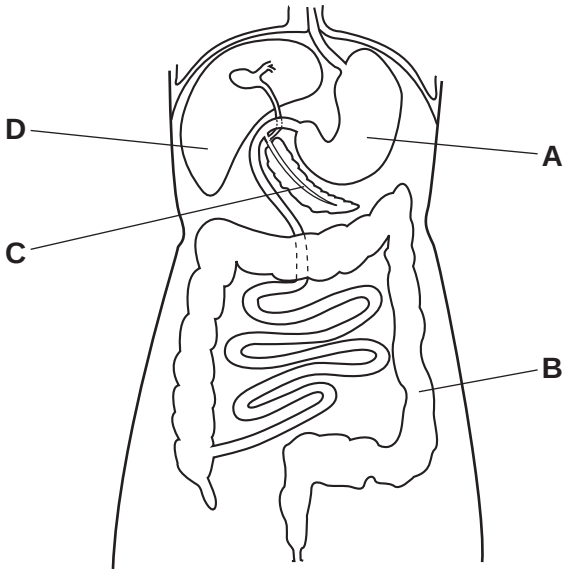
C photosynthesis

D ventilation

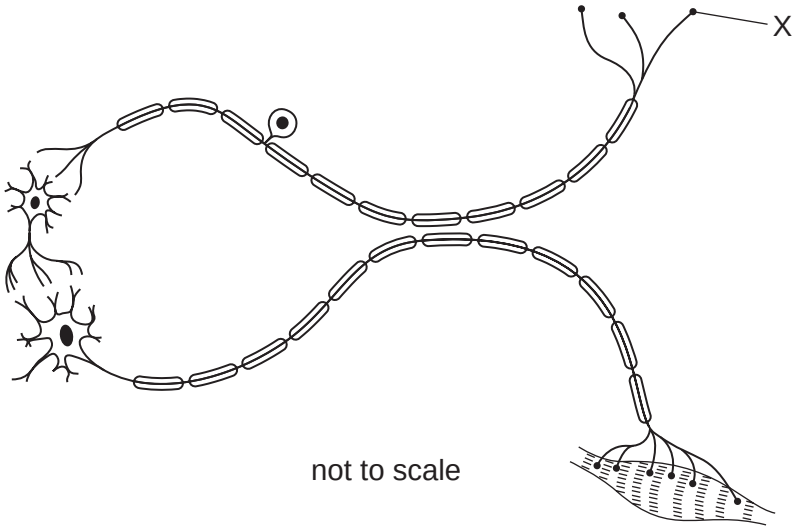
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22 The diagram shows some organs in the human body.

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



23 The diagram shows a reflex arc.



What is X?

A a relay neurone

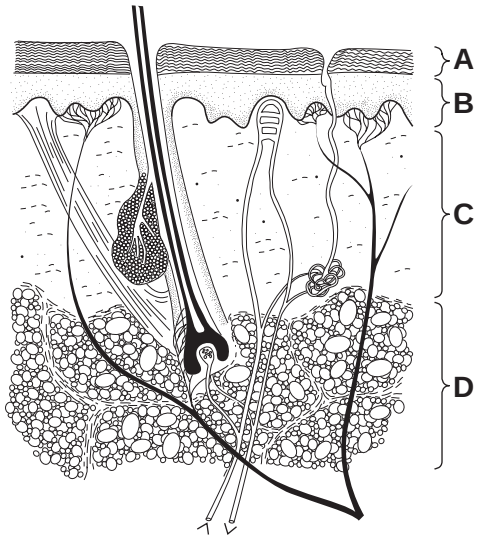
B a synapse

C the effector

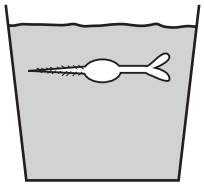
D the receptor

24 The diagram shows the skin.

Which labelled area contains fatty tissue?

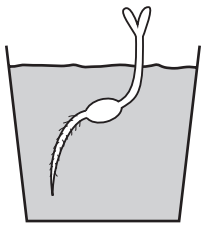


25 The diagram shows a seedling that has been placed in a pot of soil.

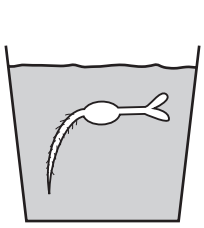


Which diagram shows what happens after five days?

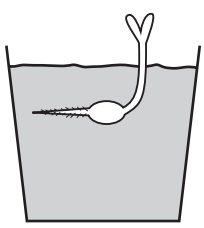
A



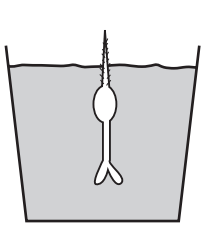
B



C



D



26 Which disease can be caused by smoking tobacco?

A cholera

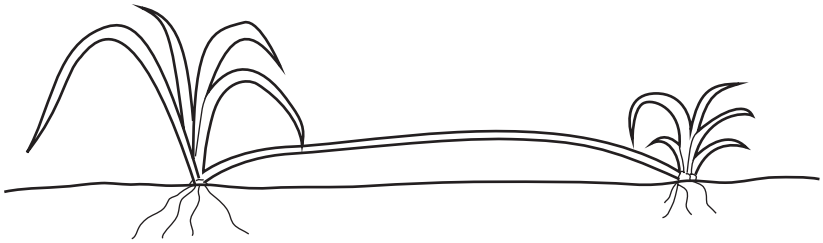
B COPD

C HIV

D scurvy

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27 The diagram shows a spider plant with a daughter spider plant growing from it.



Which statement is correct?

A Fertilisation was involved in this type of reproduction.

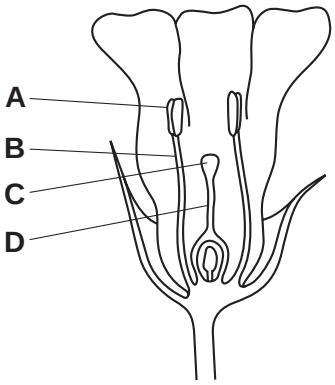
B Only one parent is needed in this type of reproduction.

C The parent and daughter plant are genetically different.

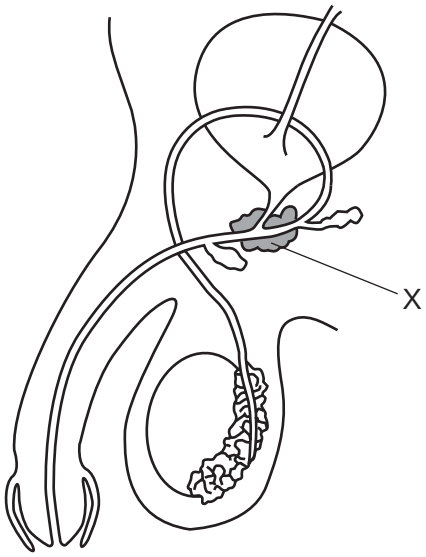
D This is an example of sexual reproduction.

28 The diagram shows half a flower.

Which structure is the stigma?



29 The diagram shows the human male reproductive system.



What is structure X?

A prostate gland

B scrotum

C testis

D urethra

30 Which hormone is involved in the development and regulation of male secondary sexual characteristics?

A adrenaline

B insulin

C oestrogen

D testosterone

31 What is produced when a cell undergoes mitosis once?

A four new cells which are different from each other and from their parent cell

B four new cells which are identical to each other and to their parent cell

C two new cells which are different from each other and from their parent cell

D two new cells which are identical to each other and to their parent cell

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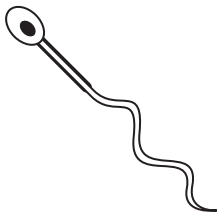
32 The diagram shows four cells.

Which cell is produced by meiosis?

A



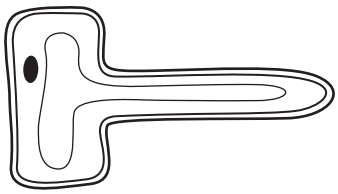
B



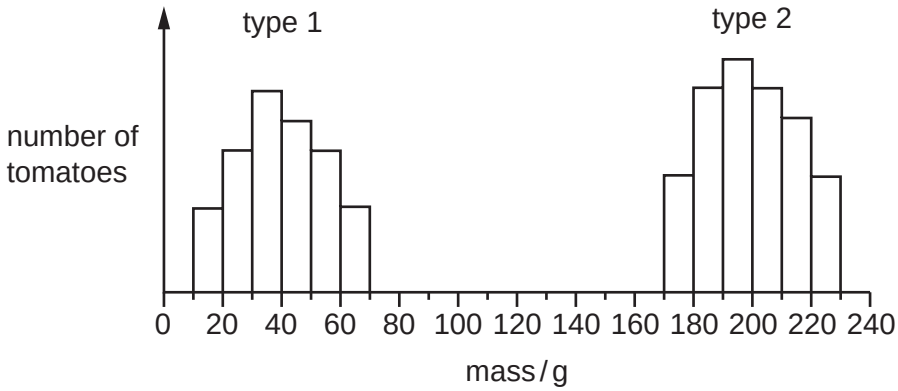
C



D



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.

34 A female guinea pig that was pure-breeding for white fur, mated with a male guinea pig that was pure-breeding for brown fur.

All the offspring had brown fur.

One of the male offspring mated with a female with white fur.

What proportion of white offspring would be expected from this cross?

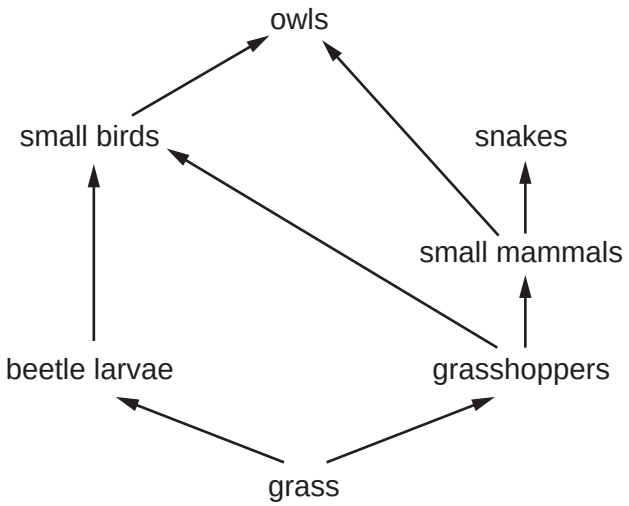
A none

B one quarter

C one third

D one half

35 The diagram shows a food web.



Which two organisms in this web are both carnivores?

A beetle larvae and grasshoppers

B beetle larvae and snakes

C owls and grasshoppers

D owls and small birds

36 Fungi can act as decomposers feeding on dead organic matter.

Which statement describes their effect on the carbon cycle?

A releasing carbon dioxide during photosynthesis

B releasing carbon dioxide during respiration

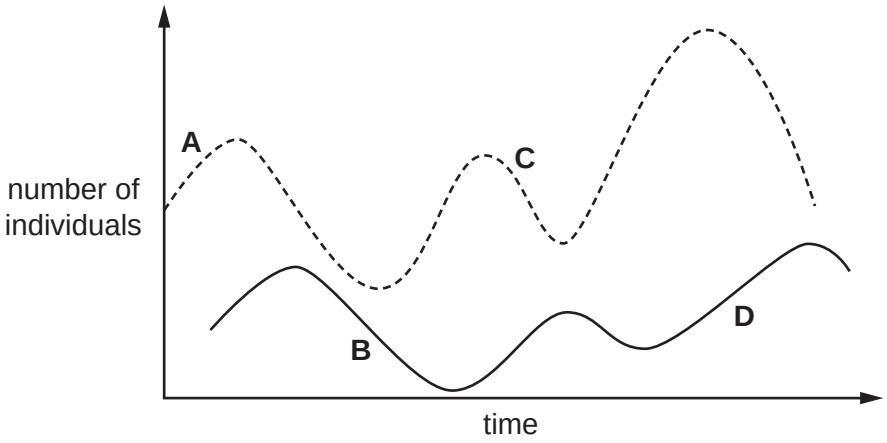
C using carbon dioxide for photosynthesis

D using carbon dioxide for respiration

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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 A crop plant has been genetically modified to make it resistant to herbicides.

Which is a possible disadvantage of introducing this new crop plant?

A Loss of weeds reduces competition.

B Some weeds might become resistant to the herbicide.

C The crop plant is unharmed and produces a higher yield.

D The new gene will appear in new generations of the crop.

39 Why is yeast used in breadmaking?

A to produce alcohol

B to produce carbon dioxide

C to use up oxygen

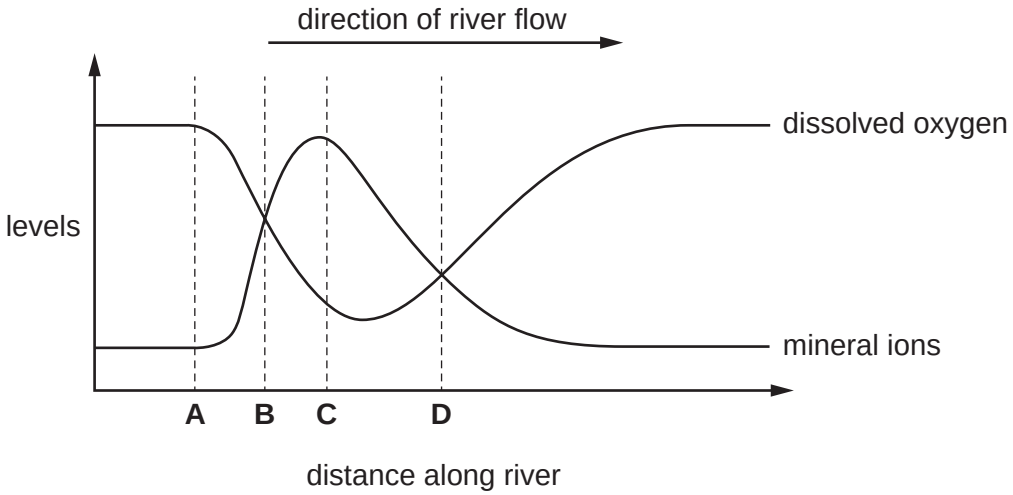
D to use up sugar

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[Turn over

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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