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)

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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CAMBRIDGE International Examinations

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

View solution

A breathing

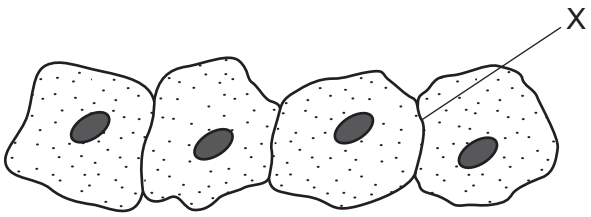
B excretion

C photosynthesis

D tropism

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

View solution



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?

View solution

A eight legs

B exoskeleton

C three pairs of legs

D wings

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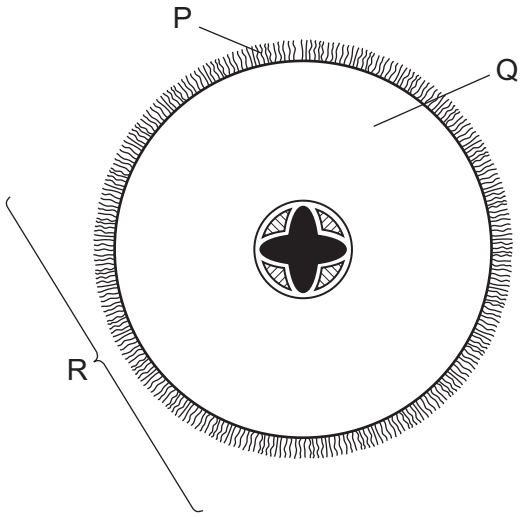
4 The diagram shows a section through a root.

View solution



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?

View solution

	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?

View solution

A cellulose, glycogen and starch

B fats, cellulose and proteins

C proteins, oils and glycogen

D starch, fats and oils

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7 Which statement about enzymes is correct?

View solution

A Enzymes are carbohydrates.

B Enzymes are catalysts.

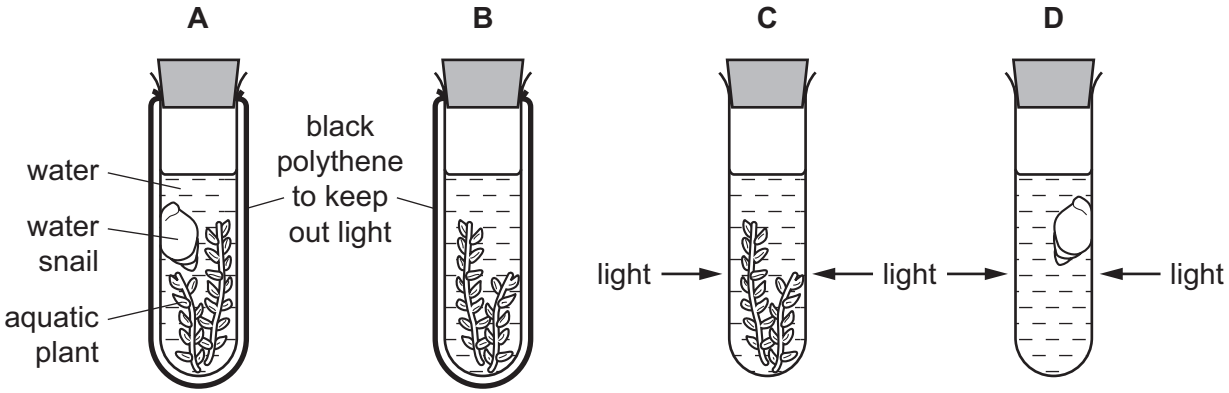
C Enzymes are living organisms.

D Enzymes are the same shape as the substrate.

8 Four test-tubes are set up as shown.

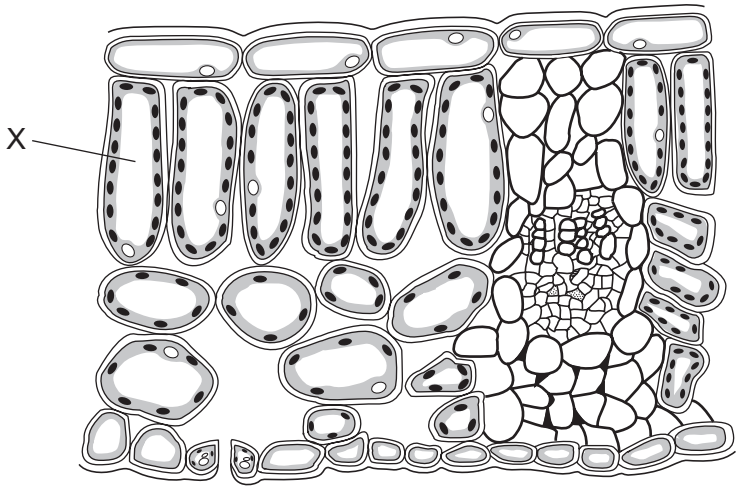
View solution

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



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

View solution



What is the cell labelled X?

A epidermis

B guard cell

C palisade mesophyll

D spongy mesophyll

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

View solution

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

View solution

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

View solution

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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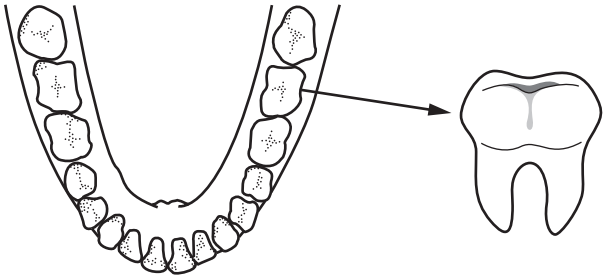
13 Which type of tooth does the diagram show?

View solution



A canine

B incisor

C molar

D premolar

14 Which statement describes assimilation?

View solution

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

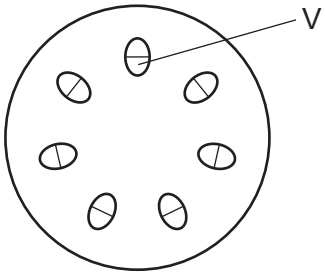
B the movement of small soluble molecules through the wall of the intestine into the blood

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.

View solution



What is the function of the tissue labelled V?

A transporting dissolved nutrients and mineral ions

B transporting dissolved nutrients only

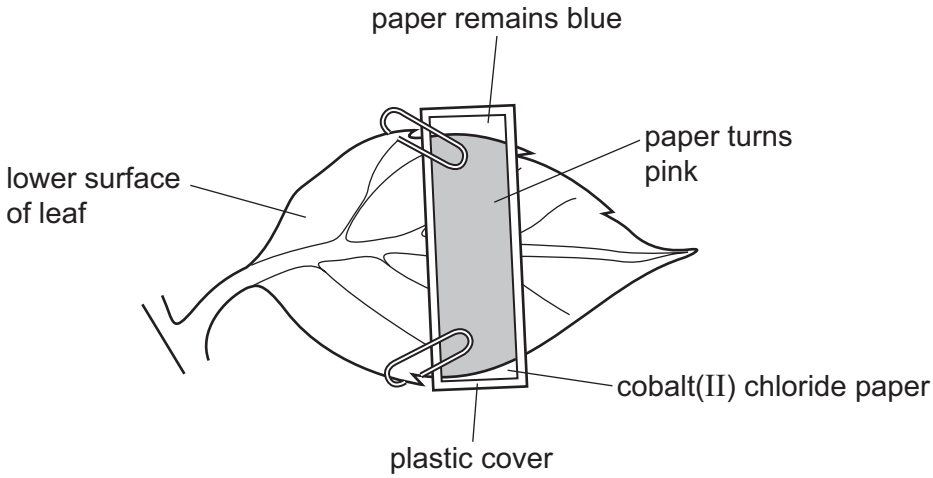
C transporting water and mineral ions

D transporting water only

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.

View solution

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?

View solution

A left atrium

B left ventricle

C right atrium

D right ventricle

18 Which component of the blood carries the most oxygen?

View solution

A plasma

B platelets

C red blood cells

D white blood cells

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19 Which is a function of some white blood cells?

View solution

A to carry glucose

B to carry oxygen

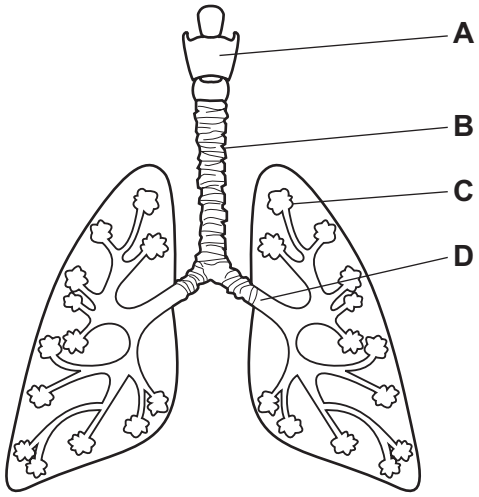
C to produce antibiotics

D to produce antibodies

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

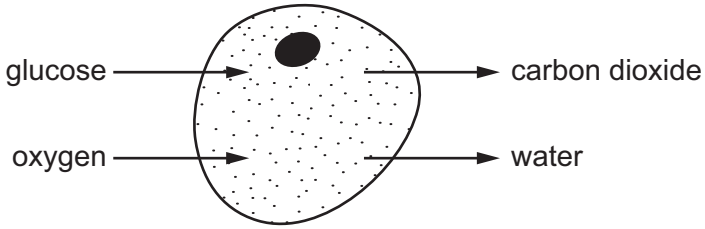
View solution

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.

View solution



Which process is taking place in this cell?

A aerobic respiration

B anaerobic respiration

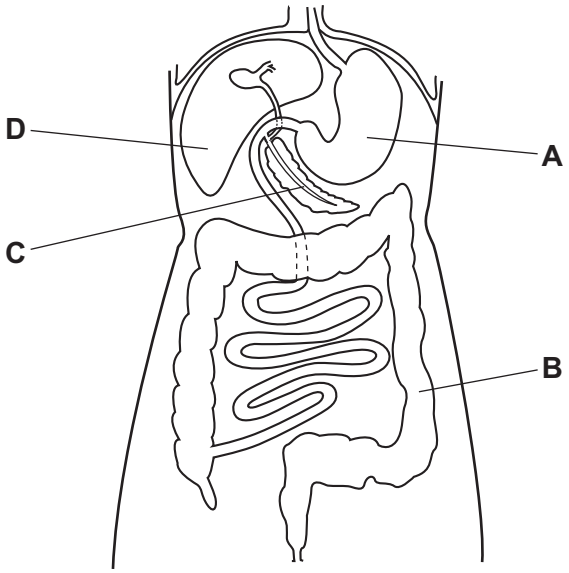
C photosynthesis

D ventilation

22 The diagram shows some organs in the human body.

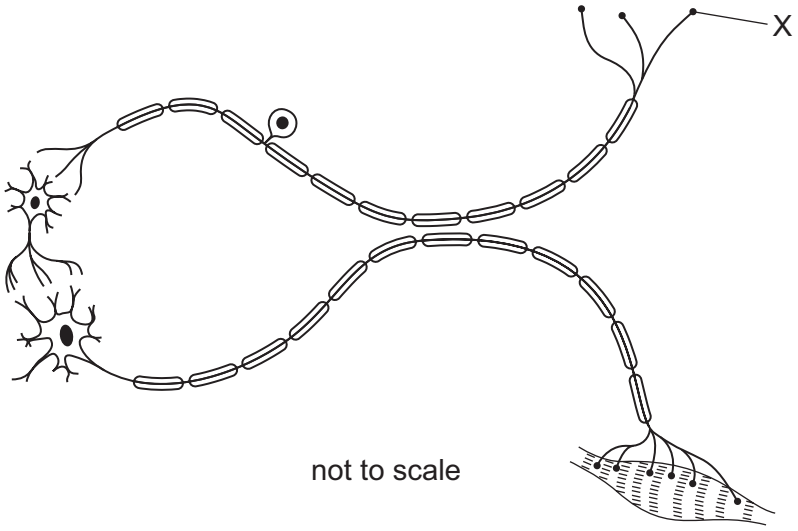
View solution

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



23 The diagram shows a reflex arc.

View solution



What is X?

A a relay neurone

B a synapse

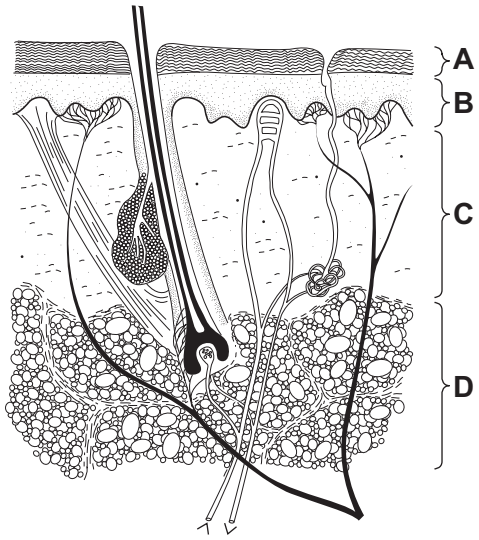
C the effector

D the receptor

24 The diagram shows the skin.

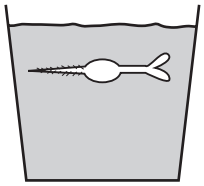
View solution

Which labelled area contains fatty tissue?

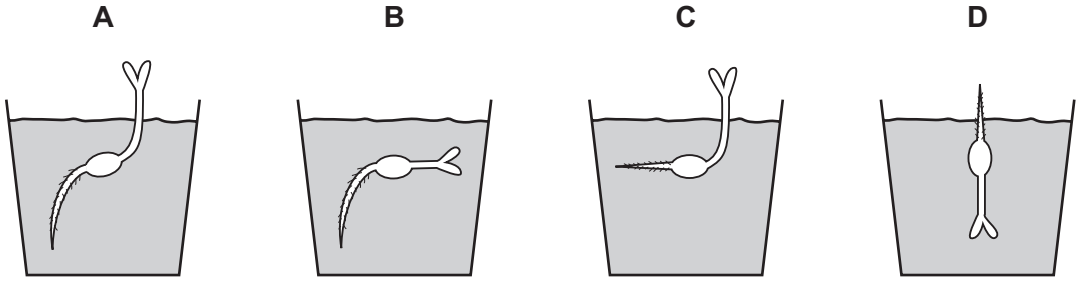


25 The diagram shows a seedling that has been placed in a pot of soil.

View solution



Which diagram shows what happens after five days?



26 Which disease can be caused by smoking tobacco?

View solution

A cholera

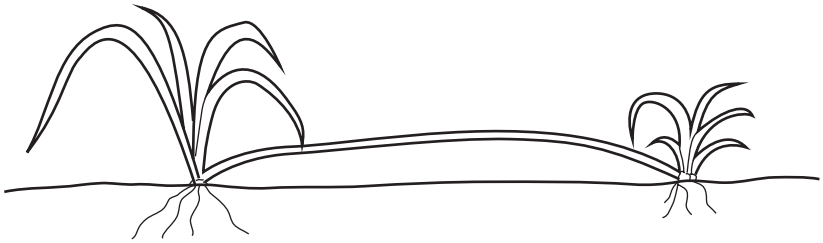
B COPD

C HIV

D scurvy

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

View solution



Which statement is correct?

A Fertilisation was involved in this type of reproduction.

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

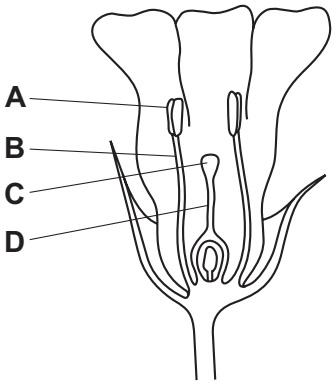
C The parent and daughter plant are genetically different.

D This is an example of sexual reproduction.

28 The diagram shows half a flower.

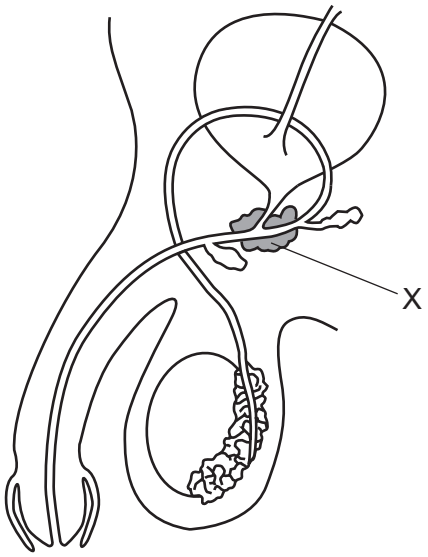
View solution

Which structure is the stigma?



29 The diagram shows the human male reproductive system.

View solution



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?

View solution

A adrenaline

B insulin

C oestrogen

D testosterone

31 What is produced when a cell undergoes mitosis once?

View solution

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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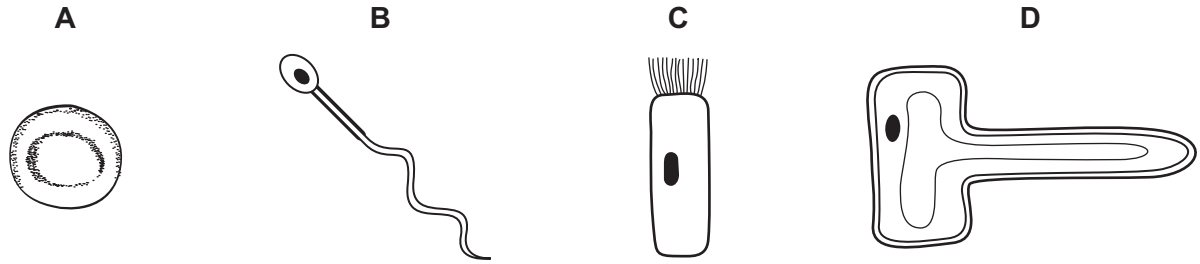
32 The diagram shows four cells.

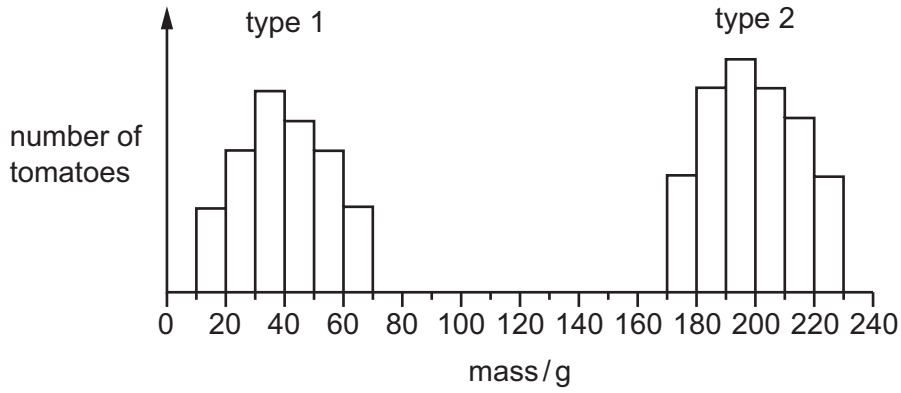
View solution

Which cell is produced by meiosis?



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

View solution



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.

View solution

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

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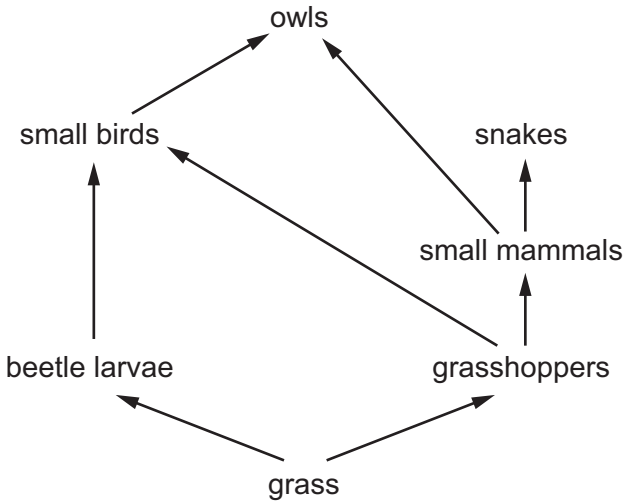
35 The diagram shows a food web.

View solution



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.

View solution

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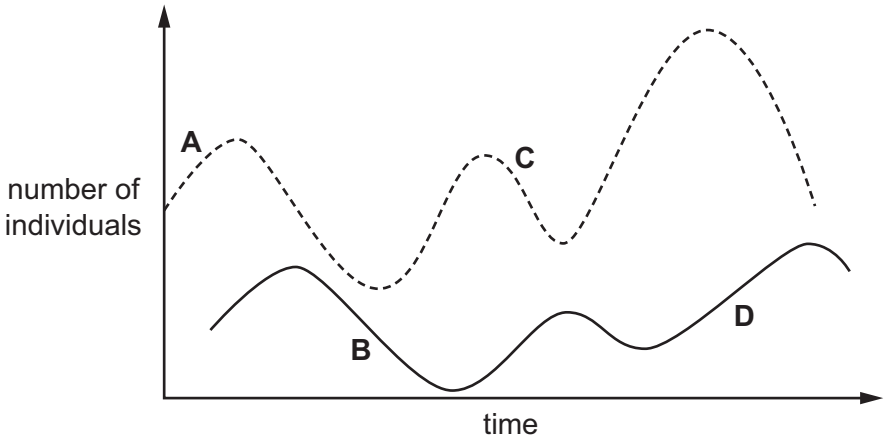
37 The graph shows the changes in the populations of predator and prey over a period of time.

View solution

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.

View solution

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?

View solution

A to produce alcohol

B to produce carbon dioxide

C to use up oxygen

D to use up sugar

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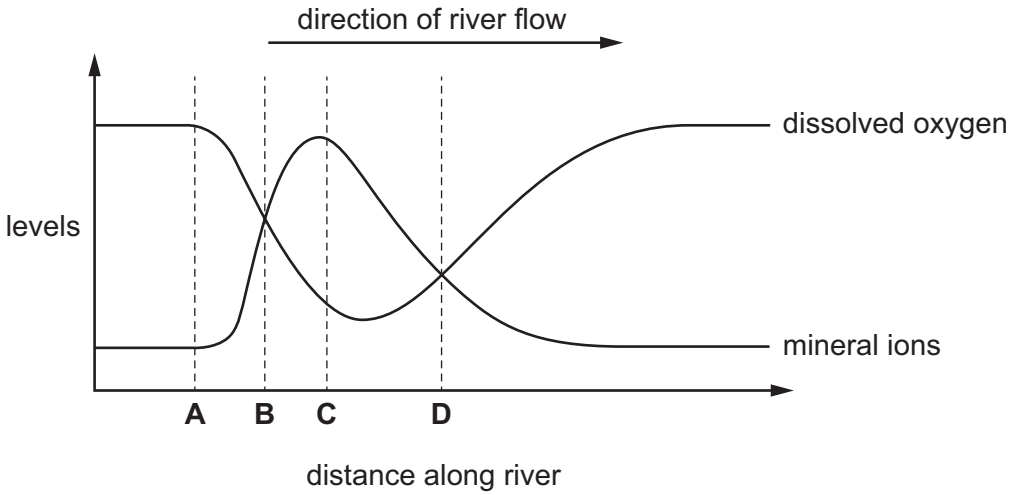
40 The graph shows the levels of dissolved oxygen and mineral ions in a river.

View solution

At which point does raw sewage enter the river?



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