Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/13**

Paper 1 Multiple Choice (Core) **May/June 2025**

45 minutes

You must answer on the multiple choice answer sheet.

You will need: Multiple choice answer sheet
Soft clean eraser
Soft pencil (type B or HB is recommended)

INSTRUCTIONS

- 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 multiple choice answer sheet.
- Follow the instructions on the multiple choice answer sheet.
- Write in soft pencil.
- Write your name, centre number and candidate number on the multiple choice answer sheet in the spaces provided unless this has been done for you.
- Do **not** use correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.

INFORMATION

- The total mark for this paper is 40.
- Each correct answer will score one mark.
- Any rough working should be done on this question paper.

This document has **16** pages. Any blank pages are indicated.

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1 The Venus flytrap is a plant that feeds on insects. When an insect lands on a specially adapted leaf, the leaf folds very quickly and traps the insect. The leaves produce enzymes which digest the insect.

Which characteristics of living organisms are involved?

A excretion, growth, nutrition

B movement, excretion, nutrition

C movement, sensitivity, growth

D movement, sensitivity, nutrition

2 A rat has the scientific name *Rattus rattus*.

What do the two parts of this name refer to?

A genus and species

B kingdom and genus

C kingdom and species

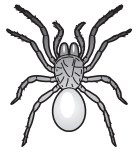
D species and group

3 Which of the animals shown is a crustacean?

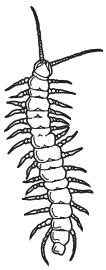
A



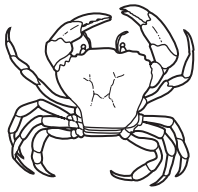
B



C



D



4 Which features do animal cells share with plant cells?

	chloroplast	cytoplasm	nucleus
A	yes	yes	yes
B	yes	yes	no
C	no	yes	yes
D	no	no	yes

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5 A student makes a drawing of an animal.

The length of the animal in the drawing is 30 mm.

The actual length of the animal is 200 mm.

What is the magnification of the student's drawing?

A ×0.15 **B** ×6.67 **C** ×15 **D** ×6000

6 Some pieces of potato plant tissue are placed in a very concentrated sugar solution. Other pieces of potato plant tissue are placed in distilled water.

What happens to the mass of the potato pieces in the two liquids?

	mass of the potato pieces in a very concentrated sugar solution	mass of the potato pieces in distilled water
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

7 Which statement describes the net movement of particles by active transport in animal cells?

A from a higher concentration to a lower concentration across a cell membrane

B from a higher concentration to a lower concentration across a cell wall

C from a lower concentration to a higher concentration across a cell membrane

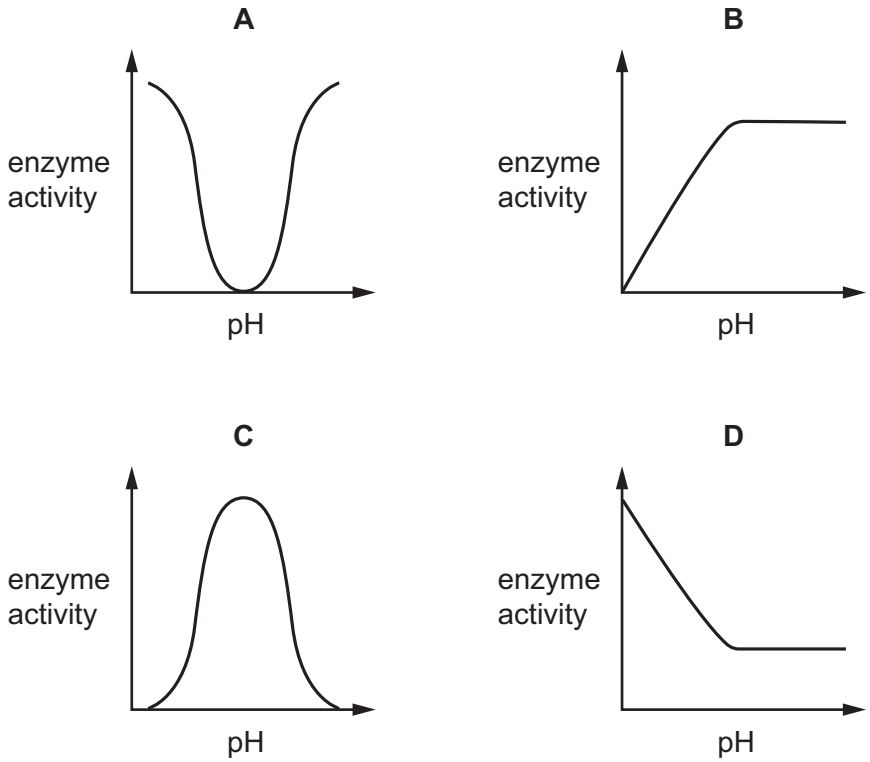
D from a lower concentration to a higher concentration across a cell wall

8 Which chemical tests should a student use to test lemon juice for reducing sugars and vitamin C?

	reducing sugars	vitamin C
A	Benedict's solution test	DCPIP solution test
B	Benedict's solution test	ethanol emulsion test
C	biuret test	DCPIP solution test
D	biuret test	ethanol emulsion test

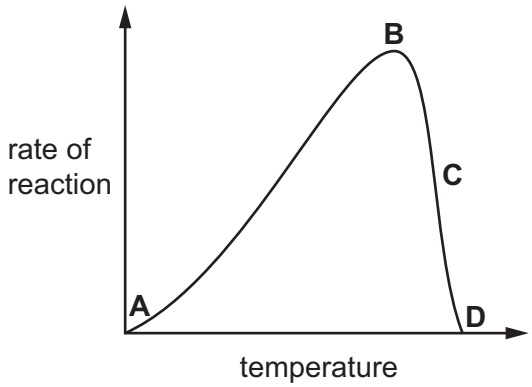
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9 Which graph shows the effect of pH on enzyme activity?



10 The graph shows the effect of temperature on an enzyme-controlled reaction.

At which point on the graph is the enzyme completely denatured?



11 Which carbohydrate is used to build plant cell walls?

A cellulose

B glycogen

C starch

D sucrose

12 In a cross-section of a leaf, what is the correct order of structures moving from the upper surface of the leaf towards the lower surface of the leaf?

A cuticle, epidermis, palisade mesophyll, spongy mesophyll

B cuticle, epidermis, spongy mesophyll, palisade mesophyll

C epidermis, cuticle, palisade mesophyll, spongy mesophyll

D epidermis, cuticle, spongy mesophyll, palisade mesophyll

13 What is the result of a diet lacking iron?

A bleeding gums

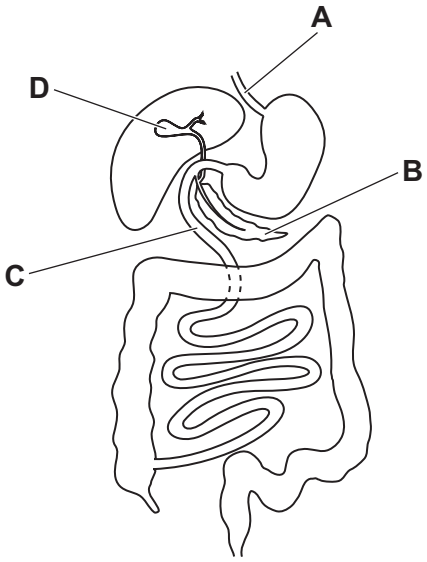
B poor wound healing

C reduced number of red blood cells

D weak bones and teeth

14 The diagram shows part of the human digestive system.

Where is lipase made?



15 Which row about an enzyme in the alimentary canal is correct?

	site of action	enzyme	substrate
A	mouth	amylase	protein
B	mouth	protease	starch
C	stomach	protease	protein
D	stomach	amylase	starch

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16 What is the pathway taken by water through a plant?

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

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

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

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

17 Which blood vessel transports blood away from the kidney?

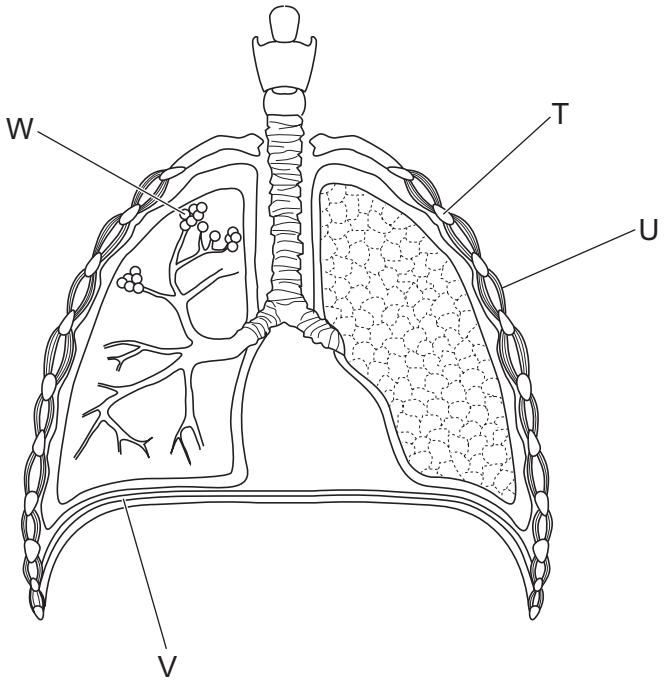
A pulmonary artery

B pulmonary vein

C renal artery

D renal vein

18 The diagram shows part of the gas exchange system in humans.



Which row identifies the structures in the diagram?

	T	U	V	W
A	rib	intercostal muscle	diaphragm	alveoli
B	intercostal muscle	rib	alveoli	diaphragm
C	rib	intercostal muscle	alveoli	diaphragm
D	intercostal muscle	rib	diaphragm	alveoli

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19 Which structure is the site of aerobic respiration in plant cells?

A chloroplast

B mitochondrion

C nucleus

D ribosome

20 Which substance is a product of anaerobic respiration in human muscles?

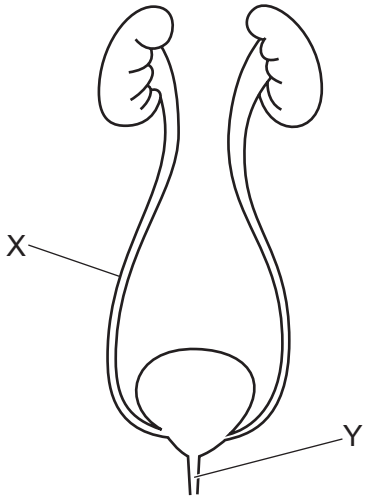
A alcohol

B carbon dioxide

C glucose

D lactic acid

21 The diagram shows a human organ system.

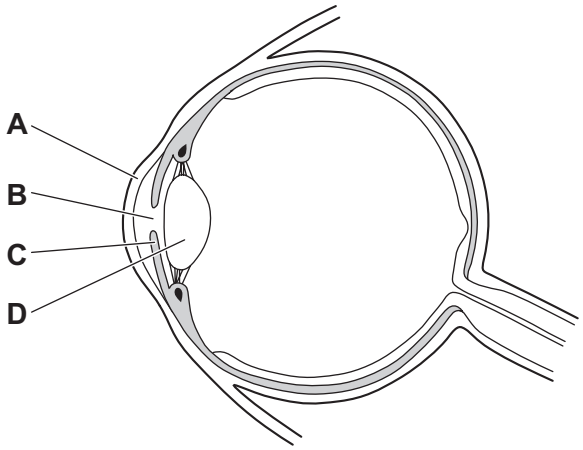


What are the names of structures X and Y?

	X	Y
A	renal artery	renal vein
B	renal vein	renal artery
C	ureter	urethra
D	urethra	ureter

22 The diagram shows a section through the human eye.

Which label identifies the iris?



23 Which hormone decreases blood glucose concentration?

A adrenaline

B glycogen

C insulin

D oestrogen

24 What is the result of asexual reproduction?

A genetically different offspring from one parent

B genetically different offspring from two parents

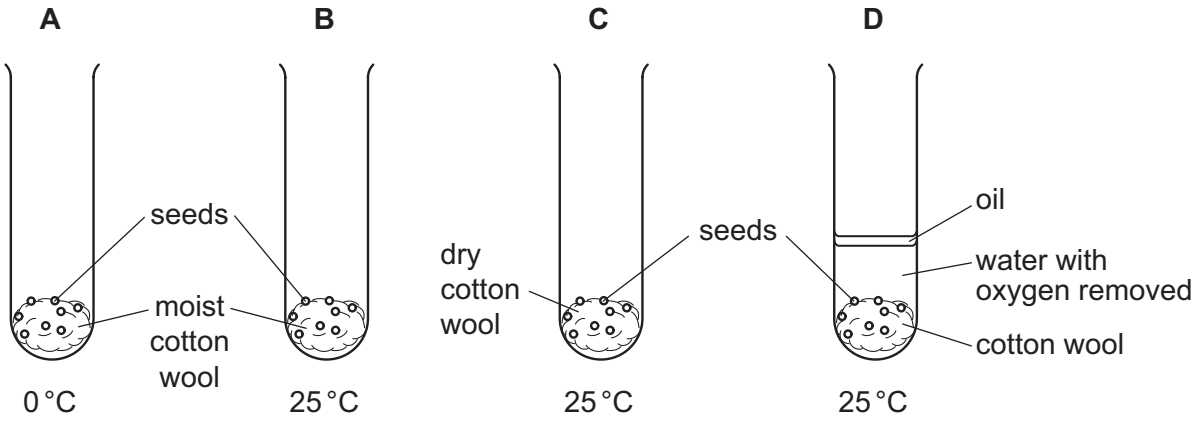
C genetically identical offspring from one parent

D genetically identical offspring from two parents

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25 Four test-tubes are set up as shown and placed in the dark.

In which test-tube will the seeds germinate first?



26 Where in the human male reproductive system are sperm produced?

A penis

B prostate gland

C scrotum

D testes

27 A person's menstrual cycle lasts for 28 days.

Which statement describes an event in this menstrual cycle?

A The ovary releases an egg on day 14.

B The ovary releases an egg on day 21.

C The uterus lining breaks down on days 14 to 21.

D The uterus lining builds up on days 1 to 7.

28 An individual has the genotype Bb.

What is the correct description of this genotype?

A heterozygous, with two different alleles of the same gene

B heterozygous, with two different genes of the same allele

C homozygous, with two different alleles of the same gene

D homozygous, with two different genes of the same allele

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[Turn over

29 Which statement describes inheritance?

A organisms which are **not** pure-breeding

B the difference between homozygous and heterozygous genotypes

C the genetic information in dominant alleles

D the transmission of genetic information from generation to generation

30 What is a feature of natural selection?

A genetic variation within populations

B plenty of resources

C production of genetically identical offspring

D selection by humans

31 What is the principal source of energy input to biological systems?

A carbon dioxide in air

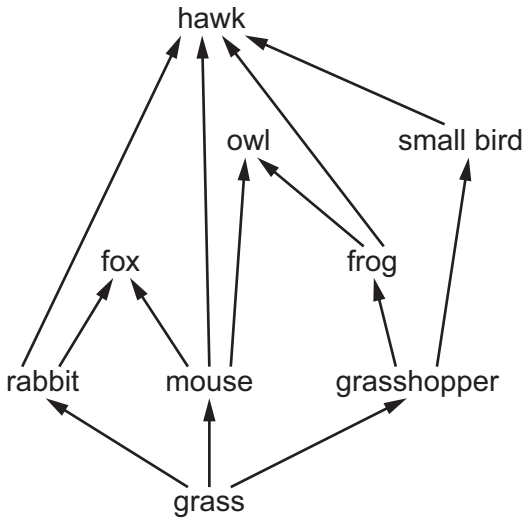
B glucose

C minerals in soil

D the Sun

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32 The diagram shows a food web.



Which food chain is part of the food web?

A grass → frog → owl → hawk

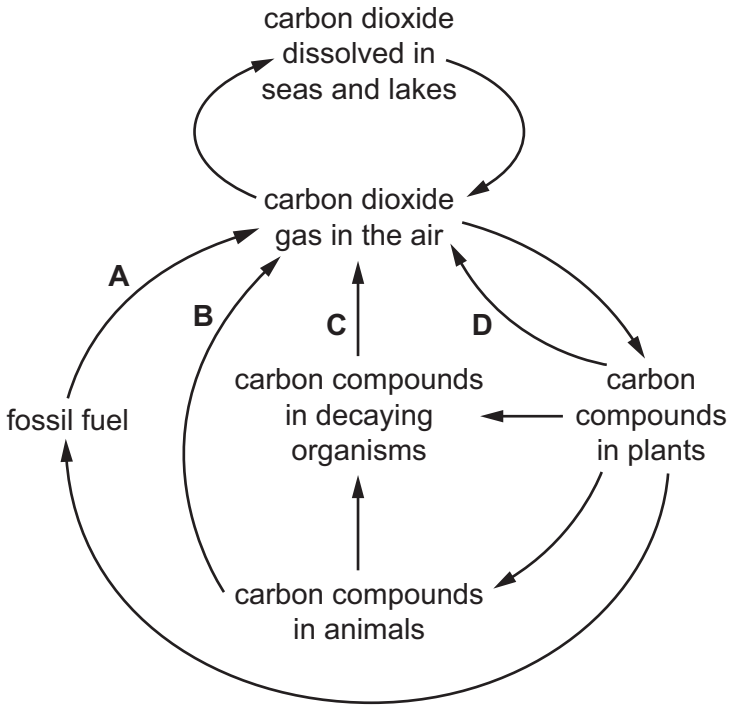
B grass → grasshopper → frog → hawk

C grass → grasshopper → mouse → fox

D grass → rabbit → owl → fox

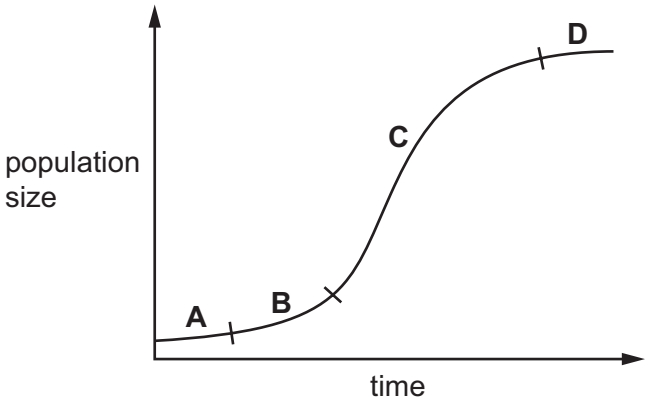
33 The diagram shows part of the carbon cycle.

Which process produces carbon dioxide from substances made by photosynthesis millions of years ago?



34 The diagram shows a graph of population growth.

On which part of the graph is the population size limited by the amounts of resources available?



35 Two methods of livestock production are described.

method 1 Animals are kept in a small area and their movement is restricted.

method 2 Animals are allowed to move freely around a large area.

What is an **advantage** of method 1 compared with method 2?

A increased pollution

B increased consumption of food by animals

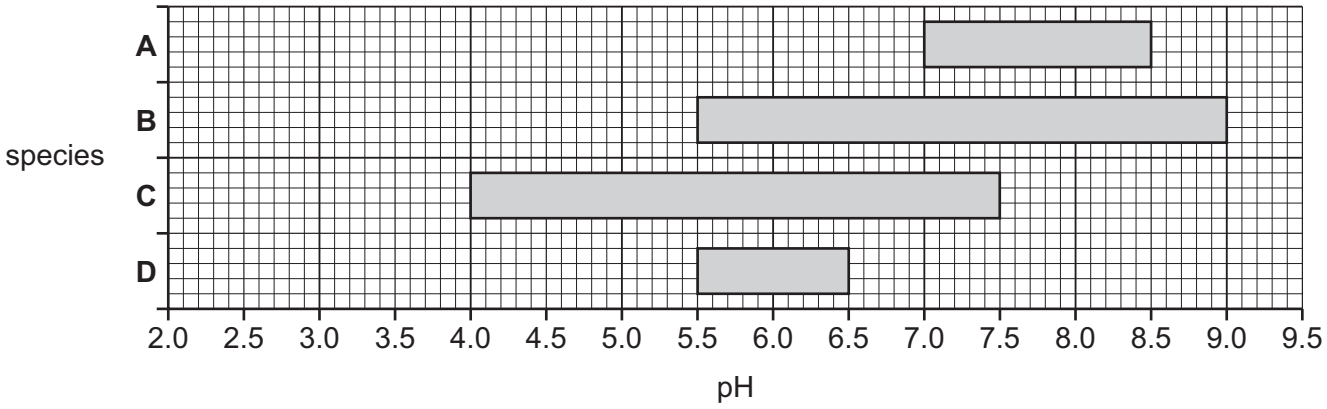
C increased rate of spread of infectious disease

D increased yield of animal product

36 Some species of aquatic insects are able to survive at different ranges of pH.

The diagram shows the pH ranges in which four different species are able to survive.

Which species is **unable** to live in an acidic environment?



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37 Which practice helps to maintain biodiversity?

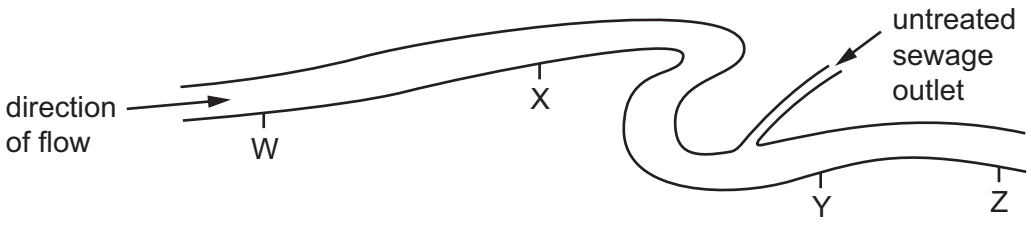
A improving crop yields by using herbicides

B increasing crop yields by using insecticides

C the protection of habitats

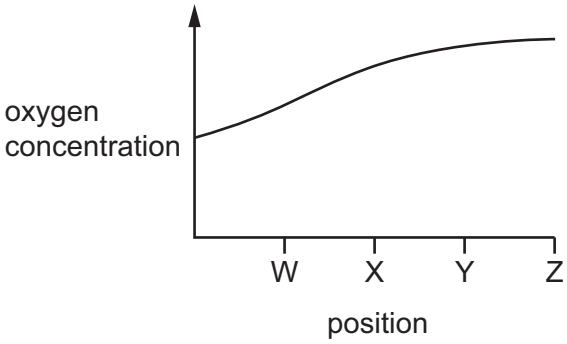
D the use of large-scale monocultures

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

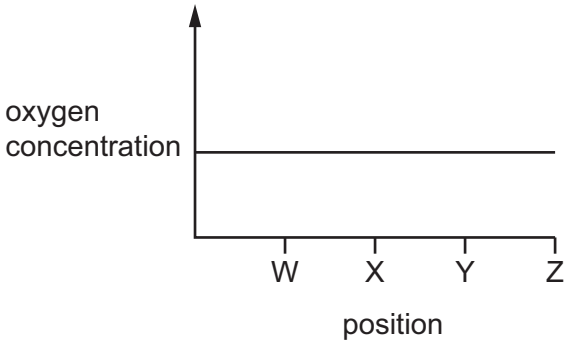


Which graph shows oxygen concentrations in the river?

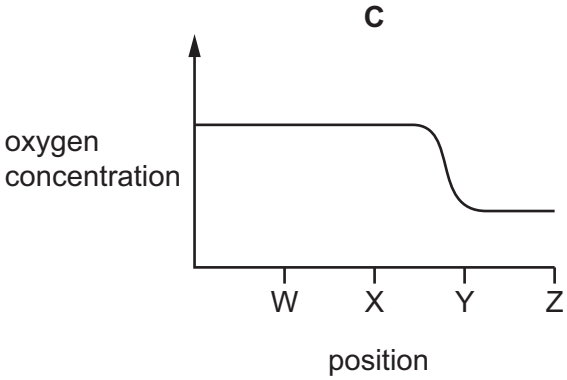
A



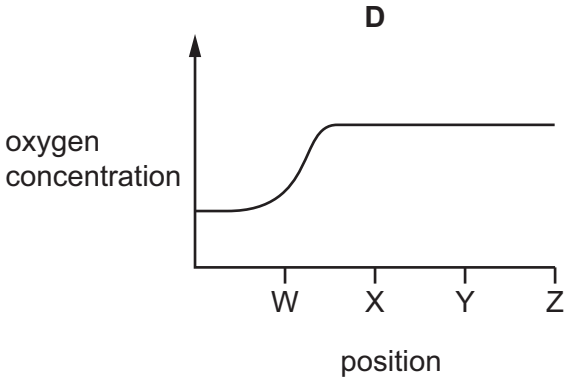
B



C



D



39 Which feature makes bacteria useful in genetic modification?

A can make complex molecules

B have a cell membrane

C have a cell wall

D reproduce slowly

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[Turn over

40 Scientists have developed a genetically modified pineapple plant that produces pink fruit.

The pineapple fruit is pink because of increased concentrations of a substance called lycopene. Eating foods containing lycopene may have health benefits for humans.

Which statement describes the purpose of this genetic modification?

A to confer resistance to insect pests

B to confer resistance to herbicides

C to improve the nutritional qualities

D to improve the crop yield

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