Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/12**

Paper 1 Multiple Choice (Core) **October/November 2020**

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. A mark will not be deducted for a wrong answer.
- Any rough working should be done on this question paper.

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[Turn over

1 Which process is carried out by all organisms?

A growth

B photosynthesis

C sexual reproduction

D transpiration

2 According to the binomial system, how should a human be named?

A *Homo Sapiens*

B *Homo sapiens*

C *homo Sapiens*

D *homo sapiens*

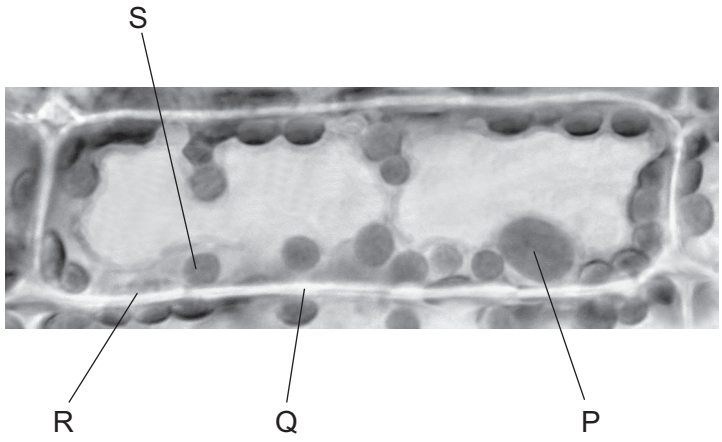
3 Some of the structures found in cells are listed:

- cytoplasm
- cell membrane
- cell wall
- chloroplast.

How many of these structures are found in the cells of **all** living organisms?

A 1 **B** 2 **C** 3 **D** 4

4 The photomicrograph shows a cell from a type of aquatic plant.



Which parts labelled on the photomicrograph indicate that this is a plant cell?

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

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5 Which type of cell transports oxygen?

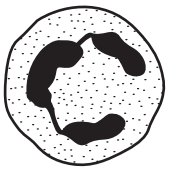
A ciliated

B nerve

C palisade mesophyll

D red blood

6 The cell shown in the diagram has been magnified 3000 times. The diagram is 21 mm wide.



What is the actual diameter of the cell?

A 21 mm

B $\frac{21\text{mm}}{3000}$

C 21 mm × 3000

D $\frac{3000}{21\text{mm}}$

7 What are features of osmosis?

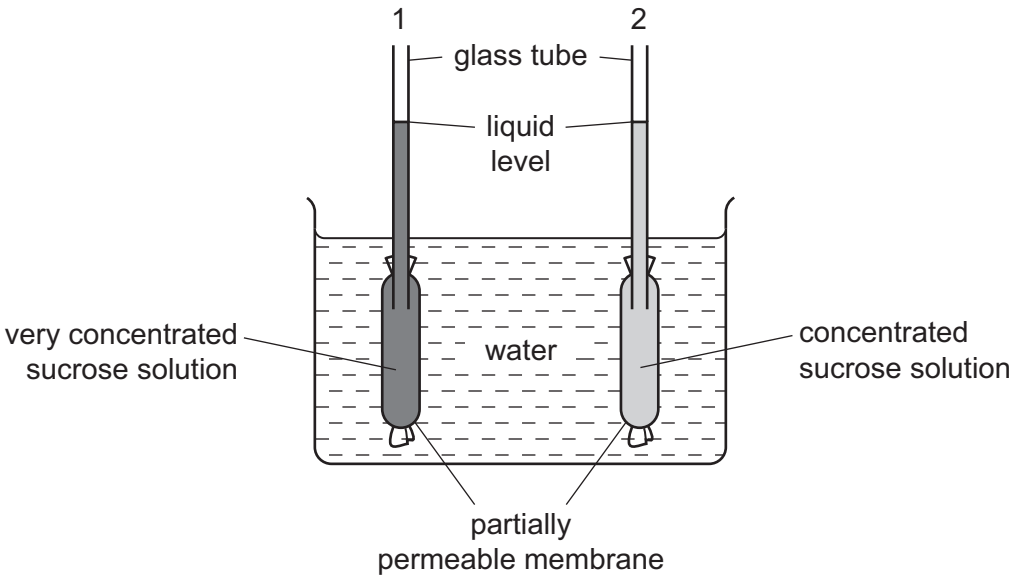
	diffusion is involved	requires cell walls	requires a partially permeable membrane
A	✓	✗	✓
B	✓	✗	✗
C	✗	✓	✓
D	✗	✓	✗

key

✓ = yes

✗ = no

8 The diagram shows apparatus which can be used to demonstrate osmosis.



After one hour, what would happen to the liquid levels in the glass tubes?

	liquid level in tube 1	liquid level in tube 2
A	falls	falls
B	falls	rises
C	rises	falls
D	rises	rises

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

A cellulose, glycogen and starch

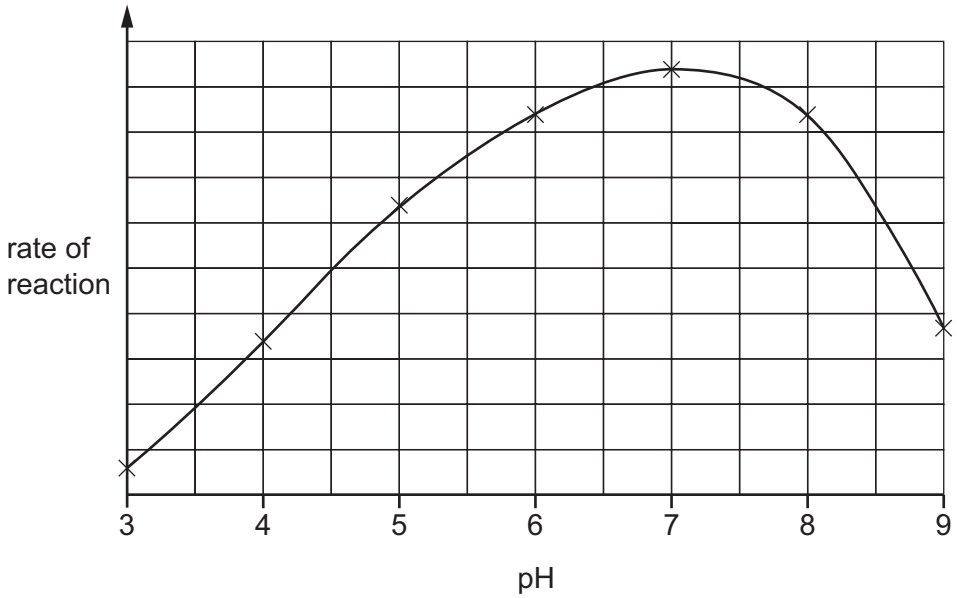
B fats, cellulose and proteins

C proteins, oils and glycogen

D starch, fats and oils

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10 The graph shows the effect of pH on the rate of reaction of an enzyme.



What does the graph show?

A The enzyme is destroyed at pH 9.

B The enzyme works best at pH 6.

C The rate of reaction halves as the pH changes from pH 5 to pH 7.

D The rate of reaction is the same at pH 5 and pH 8.5.

11 What kind of molecule is an enzyme?

A fat

B glucose

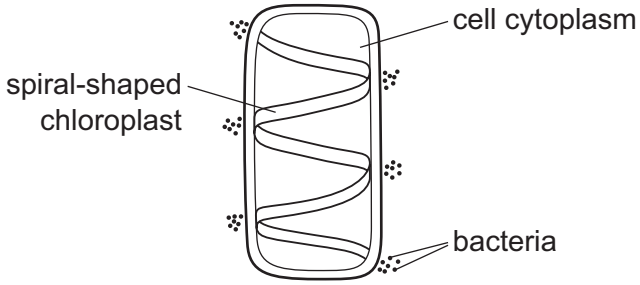
C protein

D starch

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[Turn over

12 The diagram shows a cell with groups of bacteria around its edge.



The bacteria move to areas of high oxygen concentration.

Which process in the cell causes the bacteria to form these groups?

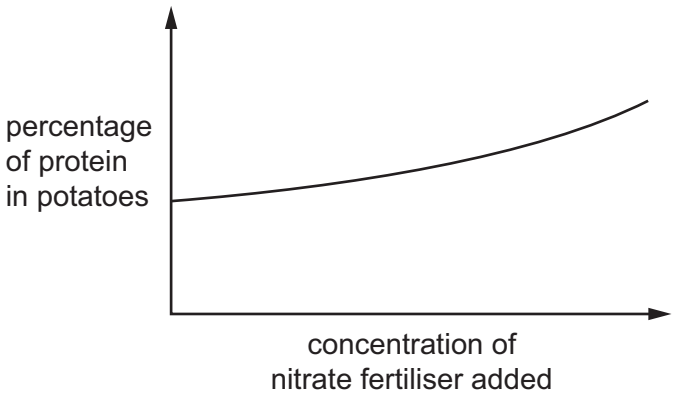
A digestion

B photosynthesis

C reproduction

D respiration

13 The graph shows how the percentage of protein found in potatoes was affected by the concentration of nitrate fertiliser added to the crop when it was growing.



These results suggest that greater concentrations of nitrate fertiliser allow the potatoes to make more

A amino acids.

B cellulose.

C lipid.

D starch.

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14 Which stage of nutrition takes place when food molecules become part of a body cell?

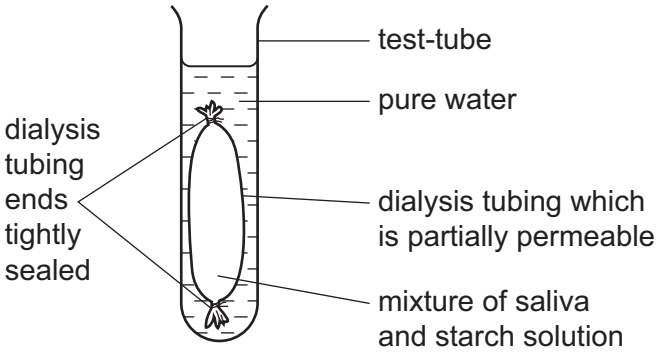
A absorption

B assimilation

C digestion

D ingestion

15 The diagram shows the apparatus used in an experiment to demonstrate two processes that take place in the body.



After one hour, the water outside the dialysis tubing contained reducing sugars.

Which two processes are represented by this experiment?

A absorption and digestion

B absorption and egestion

C digestion and egestion

D digestion and ingestion

16 Which type of organism causes tooth decay?

A arachnid

B bacterium

C producer

D virus

17 In which order does water pass through these structures in a plant?

A mesophyll → root hair → xylem

B mesophyll → xylem → root hair

C root hair → mesophyll → xylem

D root hair → xylem → mesophyll

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[Turn over

18 What is a function of phloem?

A transports minerals to the roots

B transports starch to the roots

C transports sugar to the roots

D transports water to the roots

19 What ensures that blood flows in one direction in the human circulatory system?

A diffusion of carbon dioxide

B diffusion of oxygen

C thick walled arteries

D valves

20 Some functions of blood are listed.

1 antibody production

2 blood clotting

3 oxygen transport

4 phagocytosis

What are functions of white blood cells?

A 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 3 and 4

21 Which is an example of a transmissible disease?

A coronary heart disease due to eating high fat food

B cholera after drinking contaminated water

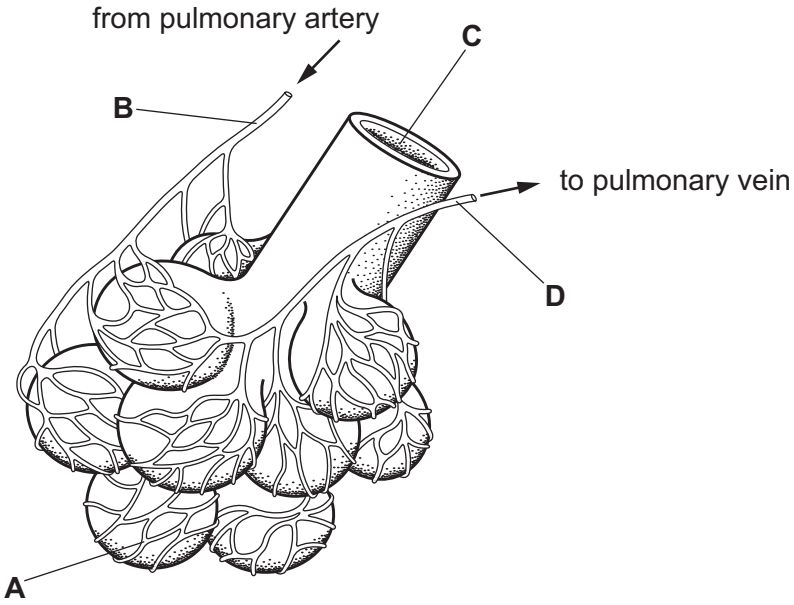
C liver damage due to drinking alcohol

D lung cancer due to inhaling tobacco smoke

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22 The diagram shows some of the structures in a human lung.

Where is the carbon dioxide concentration highest?



23 What is produced during anaerobic respiration in muscles?

A carbon dioxide

B ethanol

C lactic acid

D water

24 The amount of urea in the blood increases as it passes through organ X.

What is organ X?

A heart

B kidney

C liver

D pancreas

25 Which structure contains relay neurones?

A gland

B muscle

C spinal cord

D synapse

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[Turn over

26 A man injures his arm in an accident. Afterwards, he can move his hand but cannot feel objects touching his hand.

What could cause this?

A Both sensory and motor neurones are cut.

B Effectors are damaged.

C Motor neurones are cut.

D Sensory neurones are cut.

27 What are the effects of adrenaline on the human body?

	breathing rate	pulse rate	size of pupils
A	decreased	decreased	decreased
B	decreased	decreased	increased
C	increased	increased	decreased
D	increased	increased	increased

28 Which is the correct definition of a drug?

A a substance that affects or modifies chemical reactions in the body

B a substance that can have negative social implications

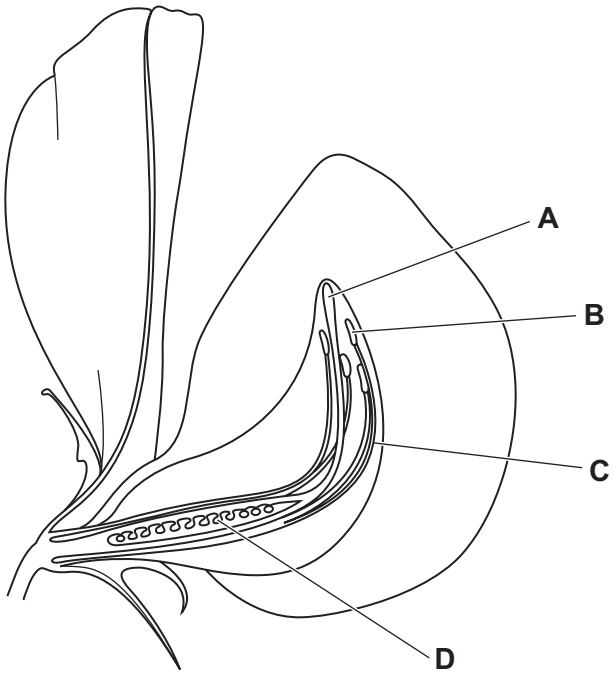
C a substance that can affect reaction times and self-control

D a substance that can kill bacteria

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29 The diagram shows a flower cut in half.

Which structure receives the pollen nucleus during fertilisation?



30 During childbirth, what must happen to the amniotic sac, cervix and the uterus wall?

	amniotic sac	cervix	uterus wall
A	breaks	contracts	contracts
B	breaks	dilates	contracts
C	expands	contracts	relaxes
D	expands	dilates	relaxes

31 What is a barrier method of birth control?

A contraceptive pill

B diaphragm

C contraceptive implant

D vasectomy

32 Which is a correct description of mitosis?

A It produces genetically identical cells called gametes.

B It produces genetically identical cells for growth and repair.

C It produces genetically different cells for growth.

D It produces genetically different cells called gametes.

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[Turn over

33 Which term is used to describe alleles that are always expressed when they are present in the genotype?

A dominant

B heterozygous

C homozygous

D recessive

34 Some human phenotypes are listed.

1 body mass

2 foot size

3 height

4 sex

Which features are examples of continuous variation?

A 1, 2 and 3 **B** 1, 3 and 4 **C** 1 and 4 only **D** 2 and 3 only

35 A food chain is shown.

potato plant → slug → hedgehog

By which process is energy transferred from the slug to the hedgehog?

A egestion

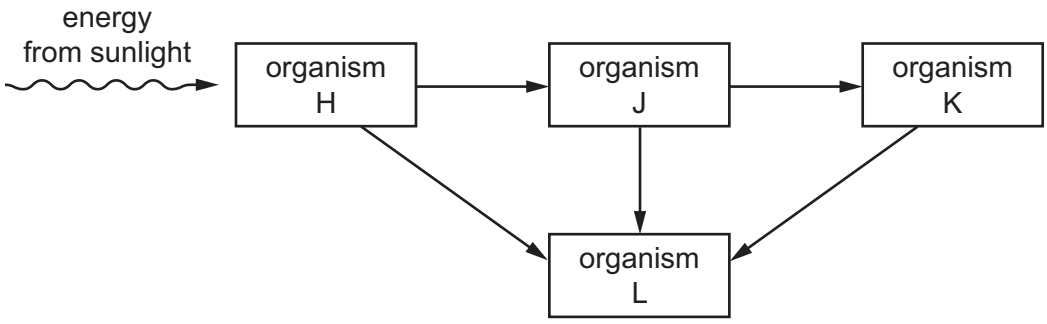
B excretion

C ingestion

D photosynthesis

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36 The diagram shows a food web.



What is organism L?

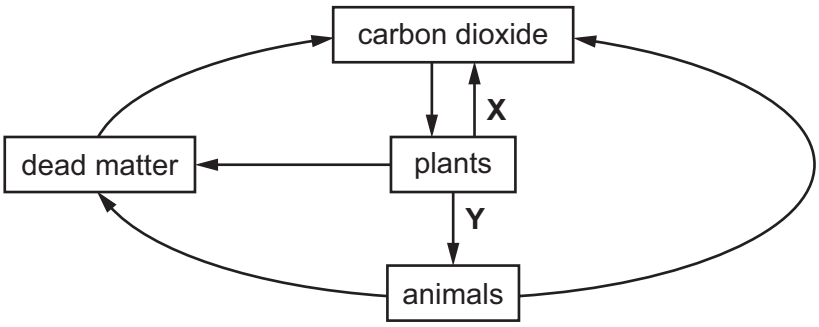
A a carnivore

B a decomposer

C a herbivore

D a producer

37 The diagram shows part of the carbon cycle.



What do arrows **X** and **Y** represent?

A decay and respiration

B feeding and photosynthesis

C photosynthesis and respiration

D respiration and feeding

38 What can be used to reduce competition between crop plants and weeds?

A fertilisers

B herbicides

C insecticides

D pollinators

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

If the land is **not** replanted with trees or crops, what effect does this have on the atmosphere?

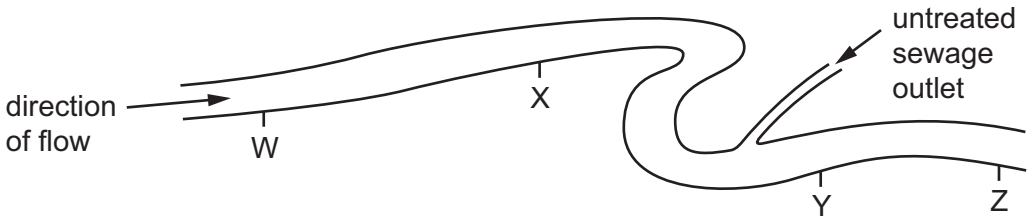
A Carbon dioxide remains the same.

B Carbon dioxide increases.

C Oxygen increases.

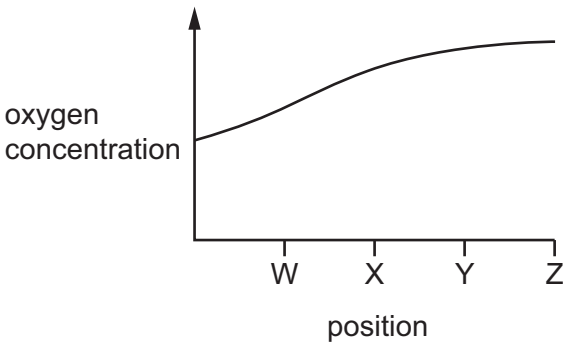
D Water vapour increases.

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

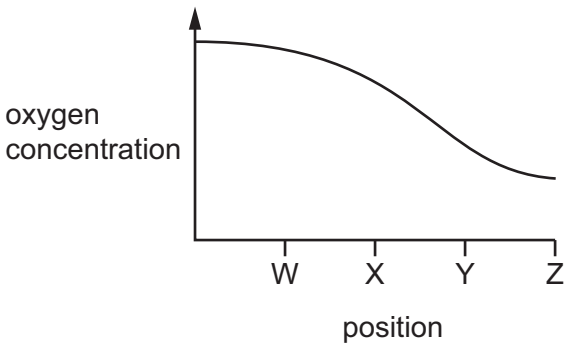


Which graph shows oxygen concentrations in the river?

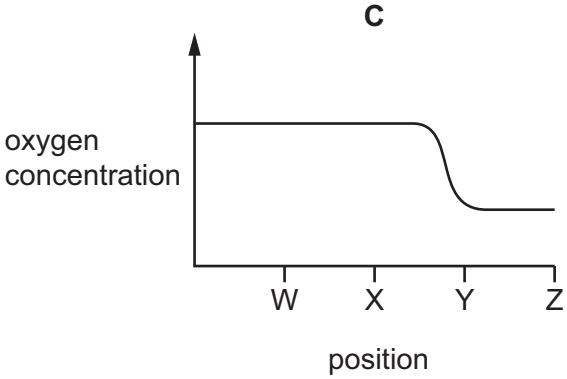
A



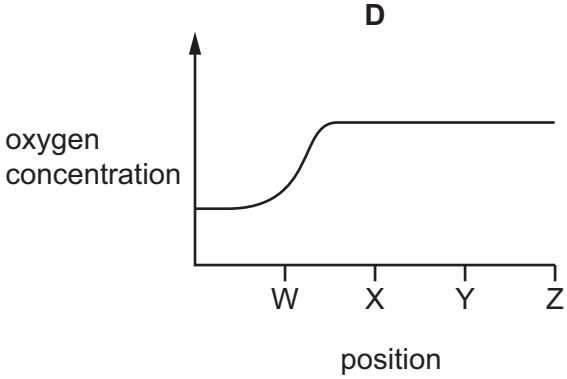
B



C



D



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