GradeMax

Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/11**

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

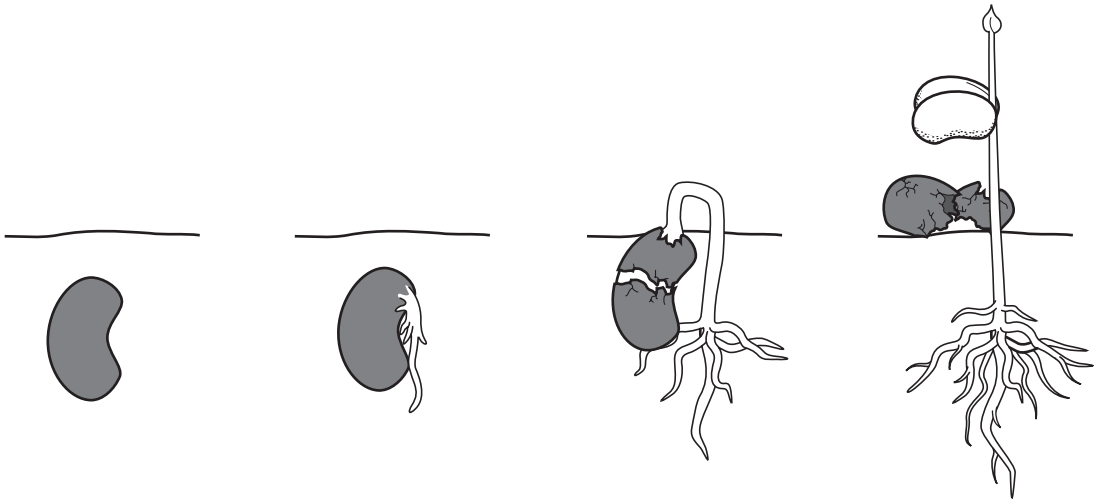
- The total mark for this paper is 40.
- Each correct answer will score one mark.
- Any rough working should be done on this question paper.

IB25 06_0610_11/5RP
© UCLES 2025

[Turn over

GradeMax

1 The diagram shows how a seed changes after it is planted in soil and watered.



Which characteristics of living things are demonstrated by the sequence shown in the diagram?

A growth only

B growth and sensitivity

C nutrition and reproduction

D reproduction and sensitivity

2 Which row describes each part of the binominal system name for humans?

	Homo	*sapiens*
A	genus	kingdom
B	genus	species
C	species	genus
D	species	kingdom

3 What are the characteristics of fish?

	maintain a constant body temperature	eggs covered in jelly	external ears present	scales present
A	yes	no	yes	no
B	yes	yes	no	yes
C	no	no	yes	no
D	no	yes	no	yes

© UCLES 2025

GradeMax

4 Which type of cell transports oxygen?

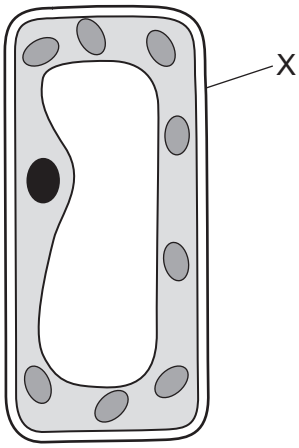
A ciliated cell

B neurone

C palisade mesophyll cell

D red blood cell

5 The diagram shows a plant cell.



What is the function of the part labelled X?

A controls what enters and leaves the cell

B strength and support

C photosynthesis

D protein synthesis

6 Four students used a microscope to view some onion plant cells. Each student drew one of the cells.

Each student calculated the actual length of the cell and the magnification of their drawing.

Which student produced the longest drawing of a cell?

	actual length of onion plant cell / mm	magnification of drawing
A	0.120	×150
B	0.125	×300
C	0.150	×225
D	0.200	×175

© UCLES 2025

[Turn over

GradeMax

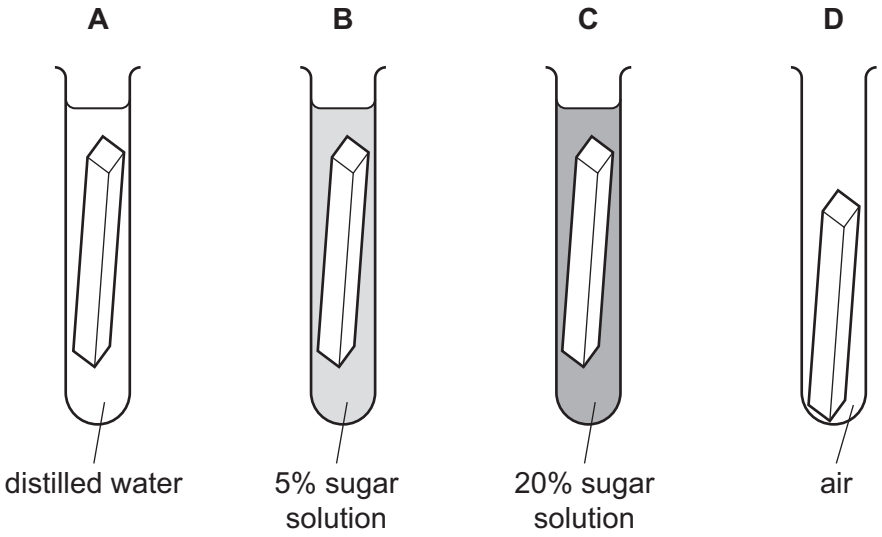
7 The table shows the concentration of gases in a blood vessel and in an alveolus.

Which row shows the conditions that cause a substance **produced** in respiration in humans to diffuse from the blood vessel into the alveolus?

	substance produced in respiration	substance concentration in the blood vessel	substance concentration in the alveolus
A	carbon dioxide	low	high
B	carbon dioxide	high	low
C	oxygen	low	high
D	oxygen	high	low

8 The diagram shows four identical pieces of potato plant tissue in test-tubes. The pieces of potato were kept in the test-tubes for six hours.

Which piece of potato would have the greatest increase in mass after six hours?



9 Which row correctly shows the elements and small molecules that are found in a large molecule?

	elements	small molecules	large molecule
A	carbon, hydrogen, oxygen, nitrogen	glucose	fat
B	carbon, hydrogen, oxygen, nitrogen	glycerol	fat
C	carbon, hydrogen, oxygen	glucose	starch
D	carbon, hydrogen, oxygen	glycerol	starch

© UCLES 2025

GradeMax

10 Which substance is the DCPIP test used for?

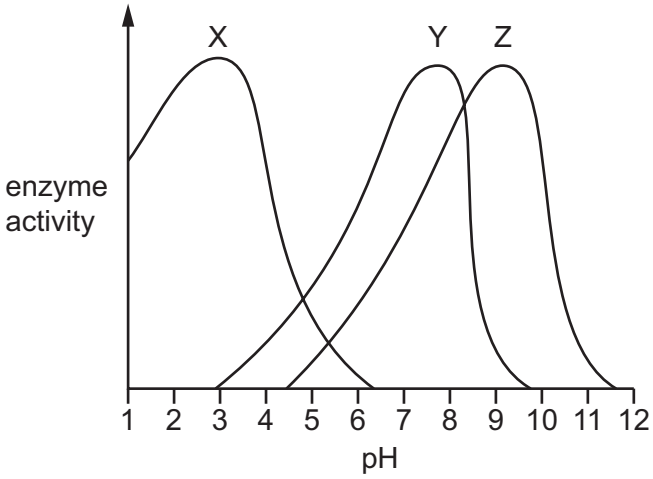
A fat

B protein

C starch

D vitamin C

11 The graph shows the activity of three digestive enzymes at differing pH values.



Which statement is correct?

A Enzymes X and Y are both active at pH 7.

B Enzymes X and Z are both active at pH 4.

C Enzymes Y and Z are both active at pH 4.

D Enzymes Y and Z are both active at pH 8.

© UCLES 2025

[Turn over

GradeMax

12 A student drew a diagram to show the substances used and produced in photosynthesis in a leaf.

1 + 2 are used by the leaf

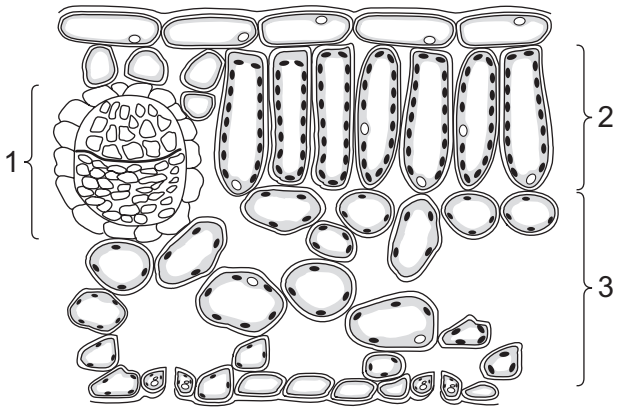


3 + 4 are produced by the leaf

Which row shows the correct labels for the diagram?

	1	2	3	4
A	carbon dioxide	glucose	oxygen	water
B	water	carbon dioxide	glucose	oxygen
C	oxygen	water	carbon dioxide	glucose
D	glucose	oxygen	water	carbon dioxide

13 The diagram shows a cross-section of part of a leaf.



What are the names of regions 1, 2 and 3?

	1	2	3
A	palisade mesophyll	vascular bundle	spongy mesophyll
B	spongy mesophyll	palisade mesophyll	vascular bundle
C	vascular bundle	palisade mesophyll	spongy mesophyll
D	vascular bundle	spongy mesophyll	palisade mesophyll

© UCLES 2025

GradeMax

14 Why is iron an important component of the human diet?

A Iron is needed to make haemoglobin.

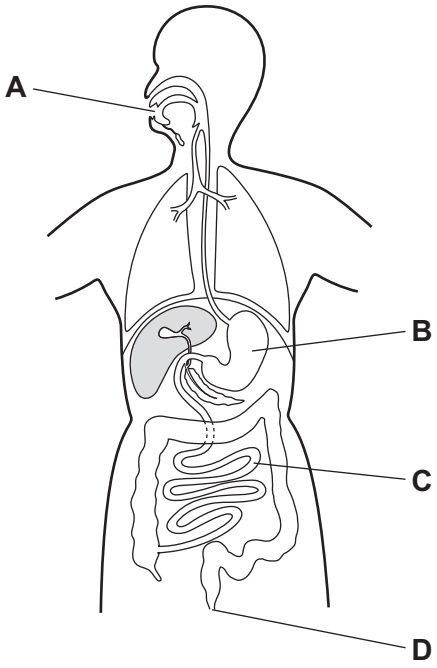
B Iron is needed to prevent rickets.

C Iron is needed to prevent scurvy.

D Iron is needed to strengthen teeth.

15 The diagram shows the digestive system.

Where does egestion take place?

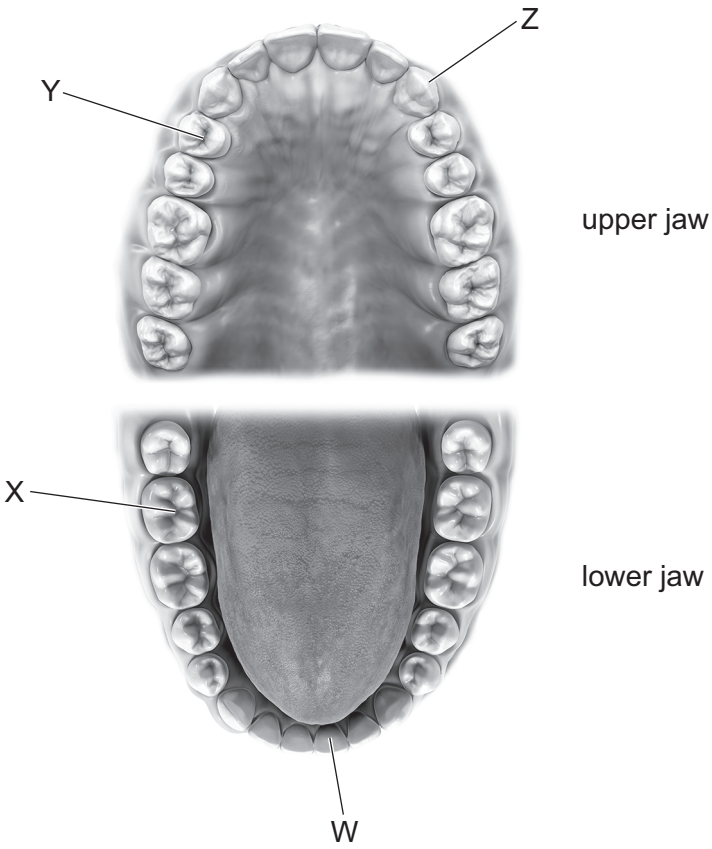


© UCLES 2025

[Turn over

GradeMax

16 The diagram shows four different types of teeth in the upper and lower jaws in a human mouth.



Which letters identify the types of teeth shown in the diagram?

	W	X	Y	Z
A	canine	premolar	molar	incisor
B	canine	molar	premolar	incisor
C	incisor	premolar	molar	canine
D	incisor	molar	premolar	canine

17 Which row shows an enzyme with the correct site of production and products of digestion?

	enzyme	site of production	products of digestion
A	amylase	salivary glands	amino acids
B	amylase	stomach	simple reducing sugars
C	protease	salivary glands	simple reducing sugars
D	protease	stomach	amino acids

© UCLES 2025

GradeMax

18 The roots of a plant are cut off and the stem is placed in a beaker containing a liquid red stain.

After a few hours, in which part of the plant stem will the red stain be visible?

A cuticle

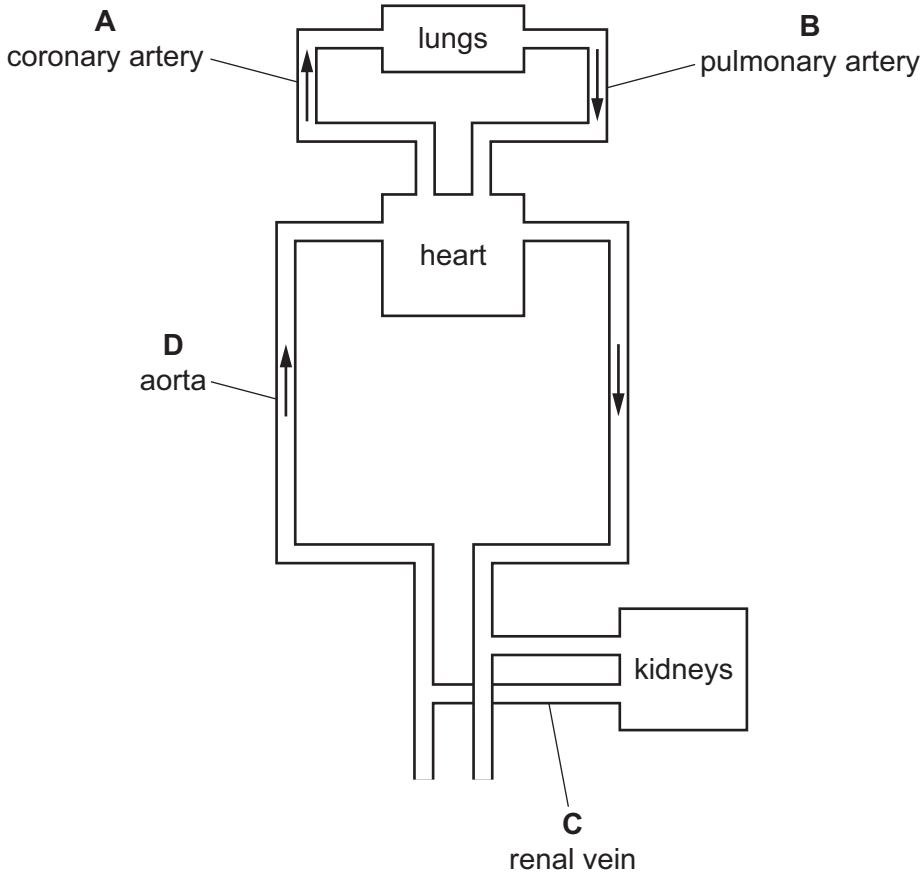
B phloem

C style

D xylem

19 The diagram shows the blood vessels between the lungs, heart and kidneys in a human. The arrows indicate the direction of blood flow.

Which blood vessel is labelled correctly?



20 Which statements describe the difference between the composition of inspired air and expired air?

1 The percentage of carbon dioxide in inspired air is greater than in expired air.

2 The percentage of carbon dioxide in inspired air is less than in expired air.

3 The percentage of oxygen in inspired air is greater than in expired air.

4 The percentage of oxygen in inspired air is less than in expired air.

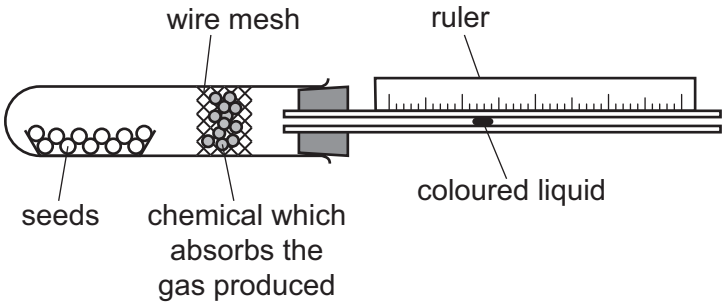
A 1 and 3 **B** 1 and 4 **C** 2 and 3 **D** 2 and 4

© UCLES 2025

[Turn over

GradeMax

21 The diagram shows apparatus that was used to investigate germination in seeds.



Which other substances must be present in the test-tube for the seeds to germinate?

A carbon dioxide and chlorophyll

B carbon dioxide and water

C chlorophyll and oxygen

D oxygen and water

22 What is a product of anaerobic respiration in yeast cells?

A alcohol

B lactic acid

C oxygen

D water

23 Which organ excretes urea?

A bladder

B kidney

C lung

D stomach

24 Which type of pathogen transmission is by direct contact?

A contaminated air

B contaminated blood

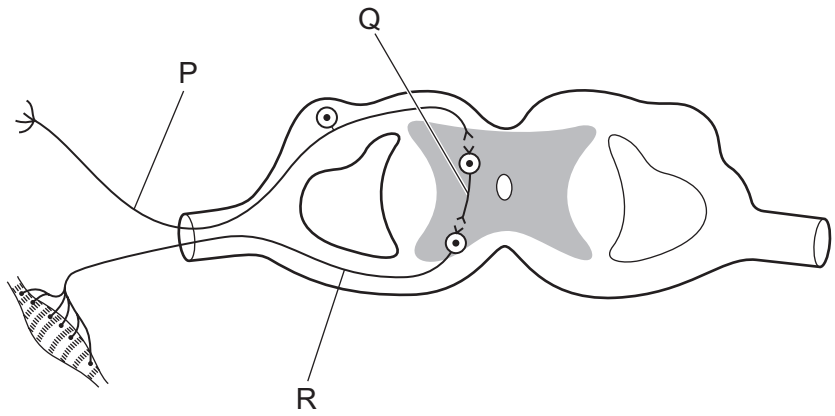
C contaminated food

D contaminated surfaces

© UCLES 2025

GradeMax

25 The diagram shows a reflex arc.



Which letters on the diagram represent the relay neurone and the sensory neurone?

	relay neurone	sensory neurone
A	P	Q
B	P	R
C	Q	R
D	Q	P

26 Which hormone is produced by the pancreas?

A adrenaline

B insulin

C oestrogen

D testosterone

27 Which statements describe correct examples of tropic responses?

1 Gravitropism is the growth of plant roots away from gravity.

2 Gravitropism is the growth of plant roots towards gravity.

3 Phototropism is the growth of plant shoots away from light.

4 Phototropism is the growth of plant shoots towards light.

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

© UCLES 2025

[Turn over

GradeMax

28 Which statement applies to antibiotics?

A They kill bacteria.

B They kill viruses.

C They are produced by platelets.

D They are produced by white blood cells.

29 Four statements about different types of reproduction are listed.

1 Offspring are formed that are genetically different.

2 Offspring are formed that are genetically identical.

3 It only occurs in animals.

4 The nuclei of two gametes fuse in fertilisation.

Which statements describe sexual reproduction?

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

30 What happens to the uterus lining at the start of the menstrual cycle?

A The uterus lining breaks down.

B The uterus lining grows new blood vessels.

C An embryo implants in the uterus lining.

D The uterus lining repairs and thickens.

31 What can reduce the transmission of HIV?

A clean water supplies

B hygienic food preparations

C use of condoms

D sewage treatment

32 What are alternative forms of genes called?

A alleles

B chromosomes

C genotypes

D phenotypes

© UCLES 2025

GradeMax

33 Humans produce two types of ear wax, either wet or dry.

Which row describes the variation in human ear wax?

	type of variation	controlled by
A	continuous	genes and environment
B	continuous	genes only
C	discontinuous	genes and environment
D	discontinuous	genes only

34 Giraffes are mammals that have long necks. This enables them to eat leaves from tall trees. One theory to explain how giraffes developed long necks is natural selection.

Which statement is part of the explanation for the development of long necks in giraffes by natural selection?

A Giraffes with longer necks were better adapted to the environment than giraffes with shorter necks.

B Humans selected giraffes with the longest necks and bred them together.

C There was **no** competition for food.

D There were **no** trees in the environment.

35 Alpine plants grow on mountains at high altitude. Alpine plants can only grow for a few months because they are covered in snow for most of the year.

What are **most** likely to be adaptive features of alpine plants?

A They flower quickly and produce seeds quickly.

B They flower quickly and produce seeds slowly.

C They flower slowly and produce seeds quickly.

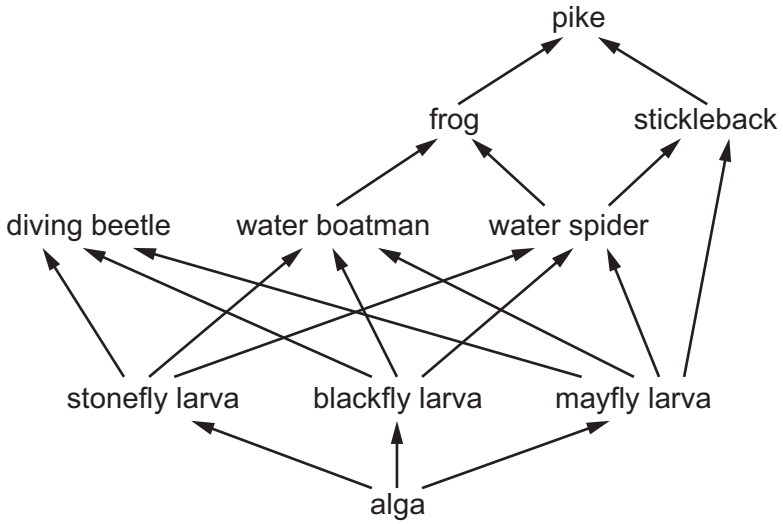
D They flower slowly and produce seeds slowly.

© UCLES 2025

[Turn over

GradeMax

36 The diagram shows a food web.



Which animal is a secondary consumer?

A blackfly larva

B diving beetle

C frog

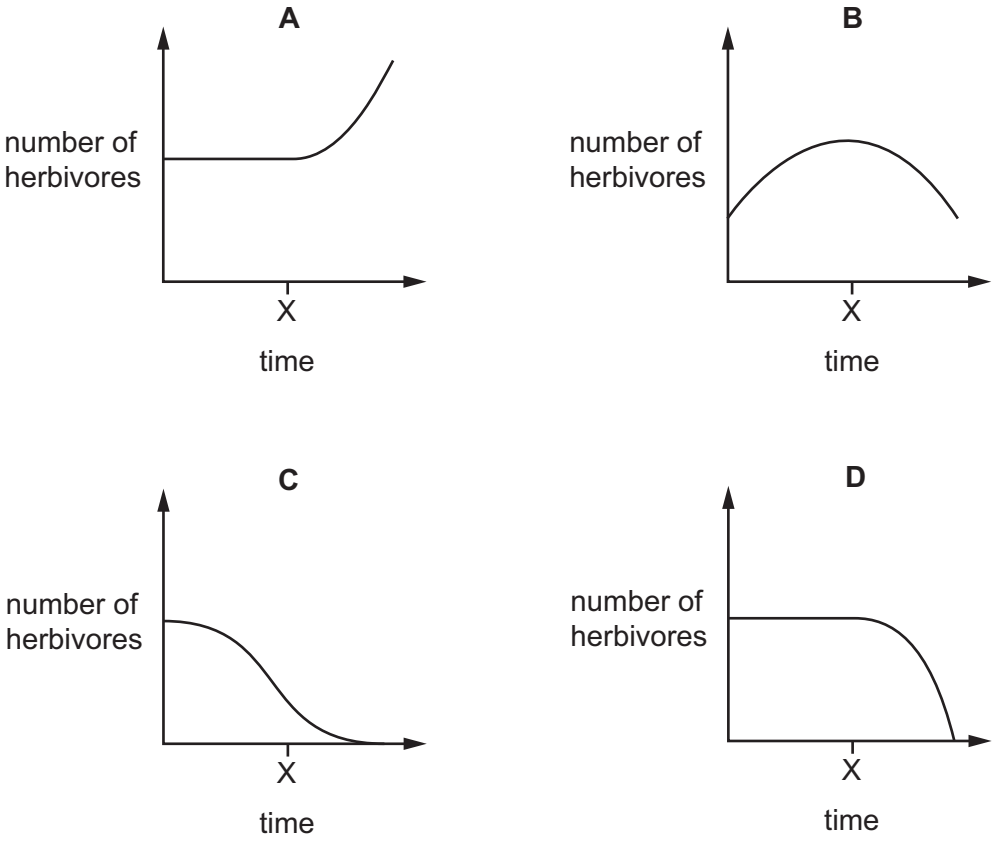
D pike

© UCLES 2025

GradeMax

37 The graphs show the number of herbivores in a habitat over a period of time. At time X, the carnivores are removed from the habitat.

Which graph shows the effect of this on the number of herbivores?



38 Some statements about food production are listed.

1 Agricultural machinery allows the efficient use of larger areas of land.

2 Herbicides increase the competition of crop plants with weeds.

3 Selective breeding improves production in livestock.

Which statements about how food production can be increased are correct?

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

39 What is one way endangered species can be conserved?

A growing monocultures

B overharvesting

C reducing biodiversity

D using seed banks

© UCLES 2025

[Turn over

GradeMax

40 The table shows the features of four different types of bacteria.

Which type of bacteria would be the **most** useful to use for biotechnology?

	reproduction rate / number of cell divisions per hour	ability to make complex molecules
A	3.0	low
B	0.5	high
C	1.0	low
D	3.0	high

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.

© UCLES 2025