Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/12**

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_12/4RP
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1 When a herbivore sees a carnivore, which characteristic of living things is involved?

View solution

A excretion

B growth

C reproduction

D sensitivity

2 Which organism has been named using the binomial system?

View solution

A *Brown seaweed*

B *Polar bear*

C *Red fox*

D *Vulpes vulpes*

3 Which list contains **only** arthropods?

View solution

A amphibians, insects, myriapods

B arachnids, crustaceans, myriapods

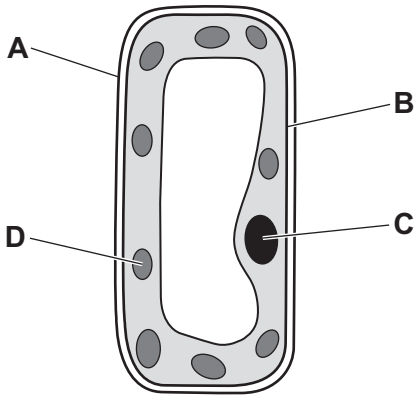
C crustaceans, insects, fish

D insects, myriapods, reptiles

4 The diagram shows a plant cell.

View solution

Which letter identifies where photosynthesis occurs in the cell?



5 The table shows the magnifications and image lengths of three specimens when seen with a light microscope.

View solution

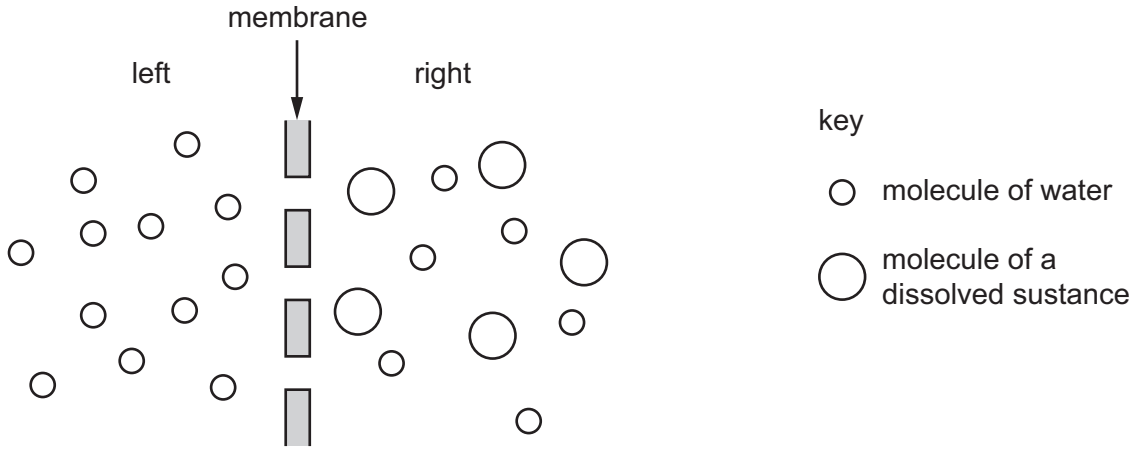
specimen	magnification	image length / mm
X	×50	0.20
Y	×150	0.50
Z	×250	0.40

What is the order of increasing actual lengths of the specimens, from smallest to largest?

A X → Y → Z **B** X → Z → Y **C** Y → X → Z **D** Z → Y → X

View solution

6 The diagram represents two liquids separated by a partially permeable membrane.



Which statement describes how the molecules will move by osmosis?

A Molecules of the dissolved substance move from left to right.

B Molecules of the dissolved substance move from right to left.

C Overall, water molecules move from left to right.

D Overall, water molecules move from right to left.

View solution

7 Small molecules are used to synthesise large food molecules.

Which statement is correct?

A Amino acids are the basic units of carbohydrates.

B Fatty acids are the basic units of glycogen.

C Glycerol is a basic unit of oils.

D Simple sugar is the basic unit of protein.

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8 A student used biuret reagent to test milk for the presence of protein.

View solution

The milk tested positive for protein.

Which colour did the sample change to?

A blue

B blue-black

C brick red

D purple

9 Which substances are used for photosynthesis?

View solution

A carbon dioxide and glucose

B carbon dioxide and water

C glucose and oxygen

D glucose and water

10 What happens when a plant lacks magnesium ions?

View solution

	chlorophyll production	colour of leaves produced
A	decreases	green
B	decreases	yellow
C	increases	green
D	increases	yellow

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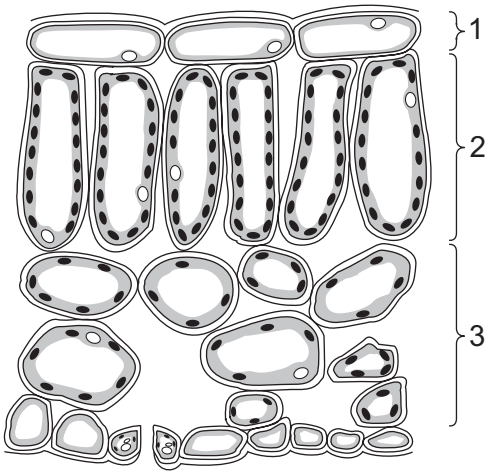
11 The diagram shows part of a cross-section of a leaf.

View solution



What are tissues 1, 2 and 3?

	1	2	3
A	epidermis	palisade mesophyll	spongy mesophyll
B	epidermis	spongy mesophyll	palisade mesophyll
C	palisade mesophyll	epidermis	spongy mesophyll
D	spongy mesophyll	palisade mesophyll	epidermis

12 A diet contains a lot of plant material, but **no** meat.

View solution

Which dietary component is **unlikely** to be deficient in this diet?

A fat

B fibre

C protein

D vitamin D

13 Which two parts of the mouth are teeth embedded in?

View solution

A cement and pulp

B enamel and dentine

C gums and bone

D pulp and bone

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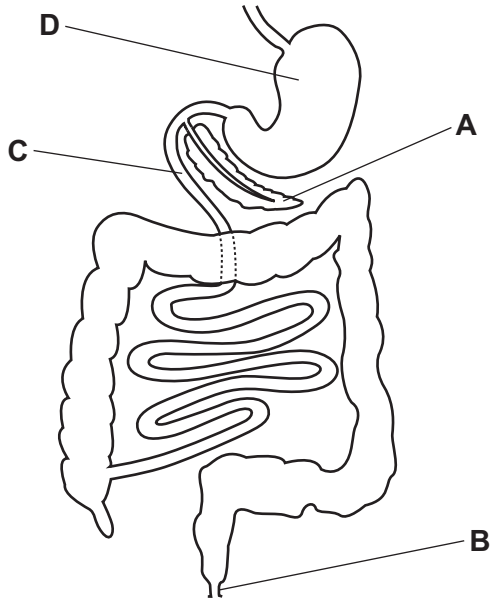
14 The diagram shows part of the human digestive system.

View solution

Where does amylase act on food?



15 What is absorbed in the colon and the small intestine?

View solution

	colon	small intestine
A	digested food only	digested food and water
B	digested food only	water only
C	water	digested food only
D	water	digested food and water

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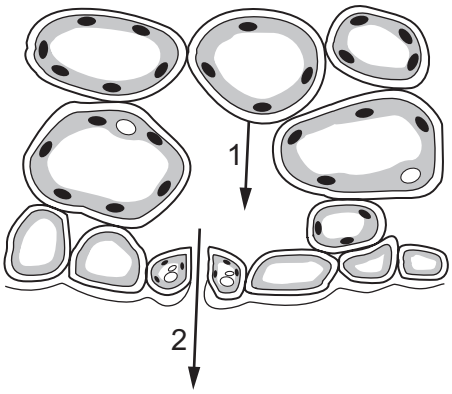
16 The diagram shows the movement of water molecules from a plant leaf to its environment.

View solution

Two processes have been numbered.



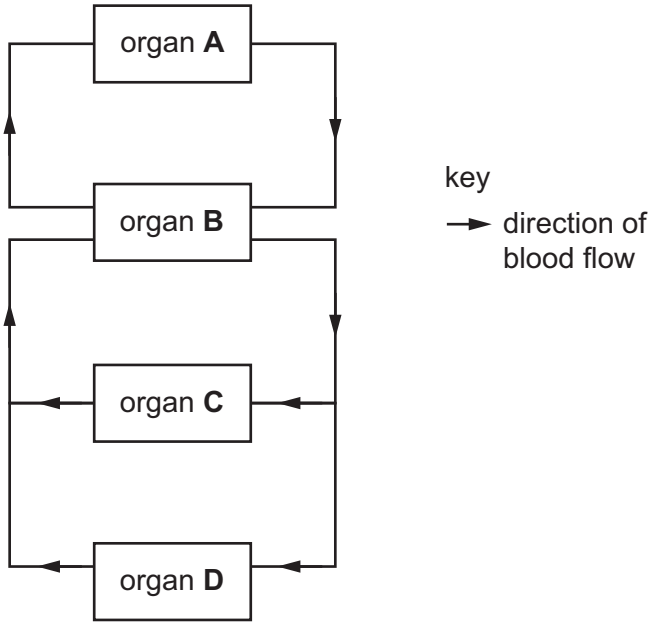
Which row identifies the numbered processes?

	process 1	process 2
A	diffusion	evaporation
B	evaporation	diffusion
C	evaporation	osmosis
D	osmosis	evaporation

17 The diagram shows a simplified circulatory system in humans.

View solution

Which organ represents the pump in this circulatory system?



18 Which blood vessel transports blood from the lungs to the heart?

View solution

A aorta

B pulmonary artery

C pulmonary vein

D vena cava

19 How can the spread of disease be prevented?

View solution

A leaving food uncovered

B only washing hands after meals

C using the same equipment to prepare raw and cooked food

D washing hands before and after handling raw food

20 Which substance can be used to test for carbon dioxide?

View solution

A DCPIP

B ethanol

C iodine solution

D limewater

21 Which statement is a correct comparison of aerobic respiration and anaerobic respiration in **yeast**?

View solution

A Only aerobic respiration produces carbon dioxide.

B Only anaerobic respiration produces alcohol.

C They both produce water.

D They both use the reactants glucose and oxygen.

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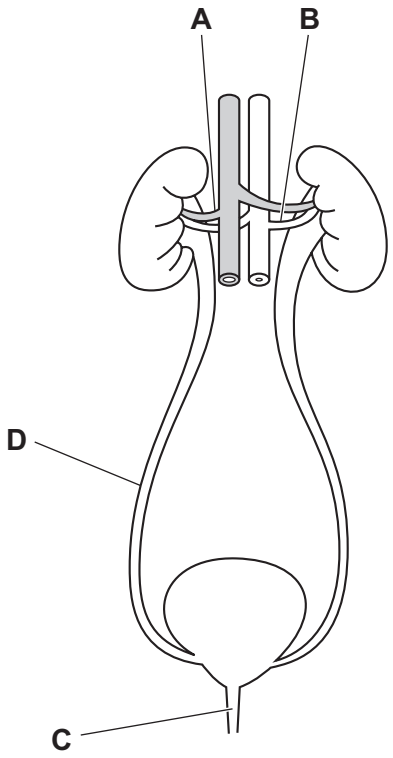
22 The diagram shows some of the organs involved in excretion.

View solution

Which label is a ureter?



23 A person touches a hot object which stimulates structure P in the skin. This causes an electrical impulse to be sent through structure Q to the central nervous system.

View solution

Which row identifies structures P and Q?

	P	Q
A	effector	motor neurone
B	effector	sensory neurone
C	receptor	motor neurone
D	receptor	sensory neurone

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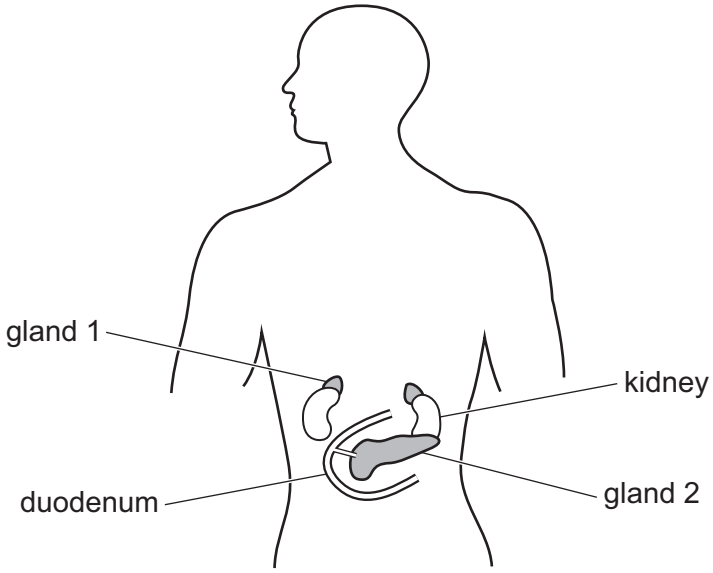
24 The diagram shows the position of two glands in the body.

View solution



Which row states the hormones produced by these glands?

	gland 1	gland 2
A	adrenaline	insulin
B	amylase	adrenaline
C	insulin	lipase
D	lipase	amylase

25 A seedling was placed in a horizontal position.

View solution

Which diagram shows the expected gravitropic responses in the seedling?

A



B



C



D



26 The diagram shows a sperm cell.

View solution

Which part contains digestive enzymes?



27 Which secondary sexual characteristic is associated with testosterone?

View solution

A breast development

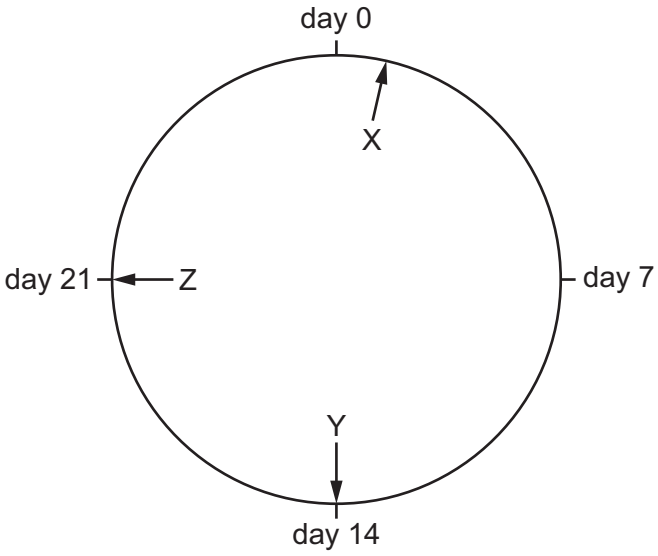
B facial hair growth

C start of the menstrual cycle

D widening of hips

28 The diagram shows a human menstrual cycle.

View solution



What are represented by X, Y and Z?

	the lining of the uterus is breaking down	an ovary releases an egg	a thick uterus lining is maintained
A	X	Y	Z
B	X	Z	Y
C	Z	Y	X
D	Z	X	Y

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29 What is an alternative form of a gene called?

View solution

A allele

B chromosome

C genotype

D protein

30 Cystic fibrosis is an inherited condition that occurs when an individual is homozygous for the recessive allele.

If both parents are heterozygous for this characteristic, what is the probability that their first child will have cystic fibrosis?

View solution

A 0% **B** 25% **C** 50% **D** 100%

31 Which characteristic is an example of continuous variation?

View solution

A ABO blood groups in humans

B body mass in cats

C seed colour in pea plants

D seed shape in pea plants

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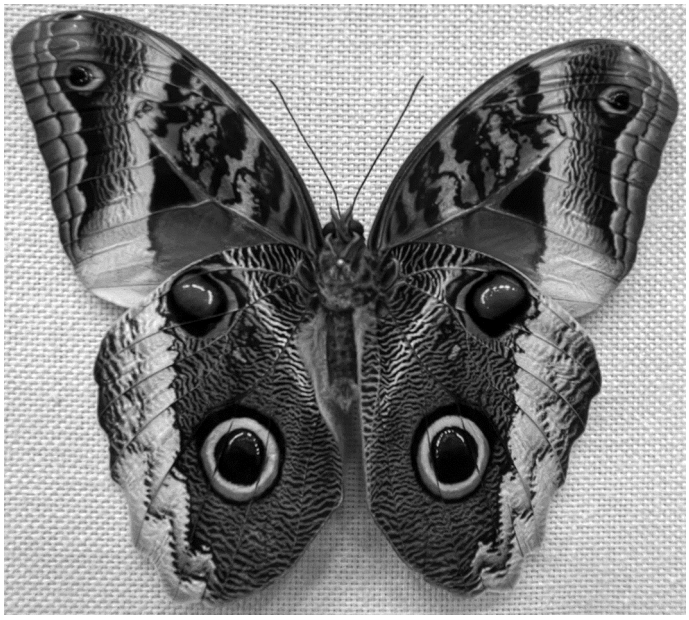
32 The photograph shows the butterfly *Caligo martia*.

View solution



Which feature is an adaptation to prevent predation?

A large wings to fly slowly

B long antennae to detect flower nectar

C spots on the wings that look like large eyes

D the pattern on the wings that makes the butterfly easier to see

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

View solution

A kinetic

B photosynthesis

C respiration

D the Sun

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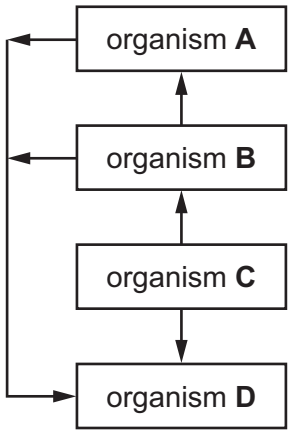
34 The diagram shows the flow of energy in a food chain.

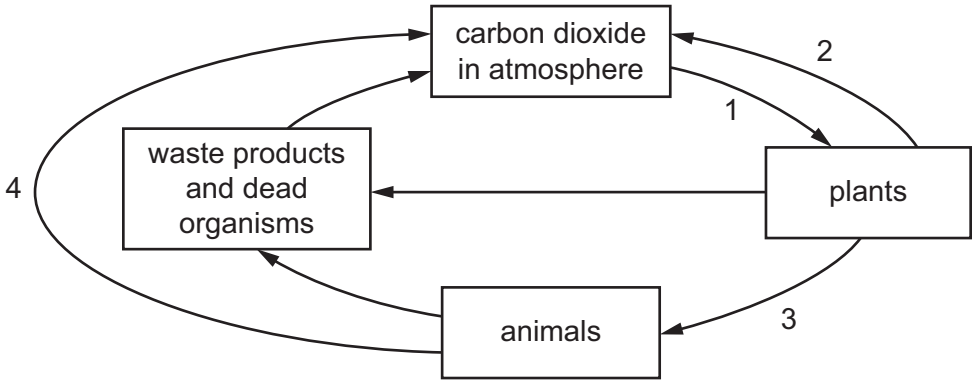
View solution

Which organism is the producer in the food chain?



35 The diagram shows part of the carbon cycle.

View solution



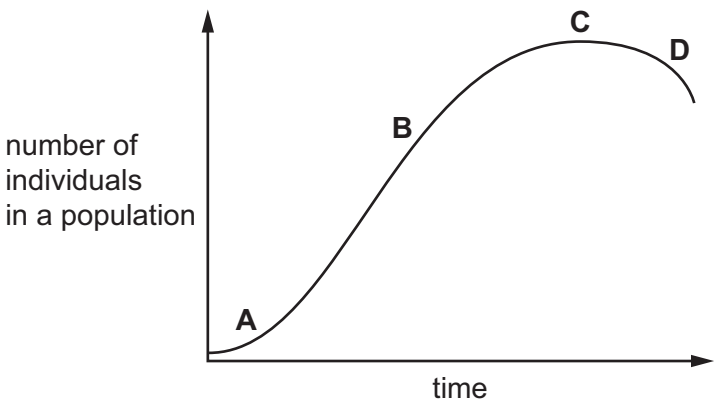
Which two numbered arrows represent respiration?

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

36 The diagram shows a population curve.

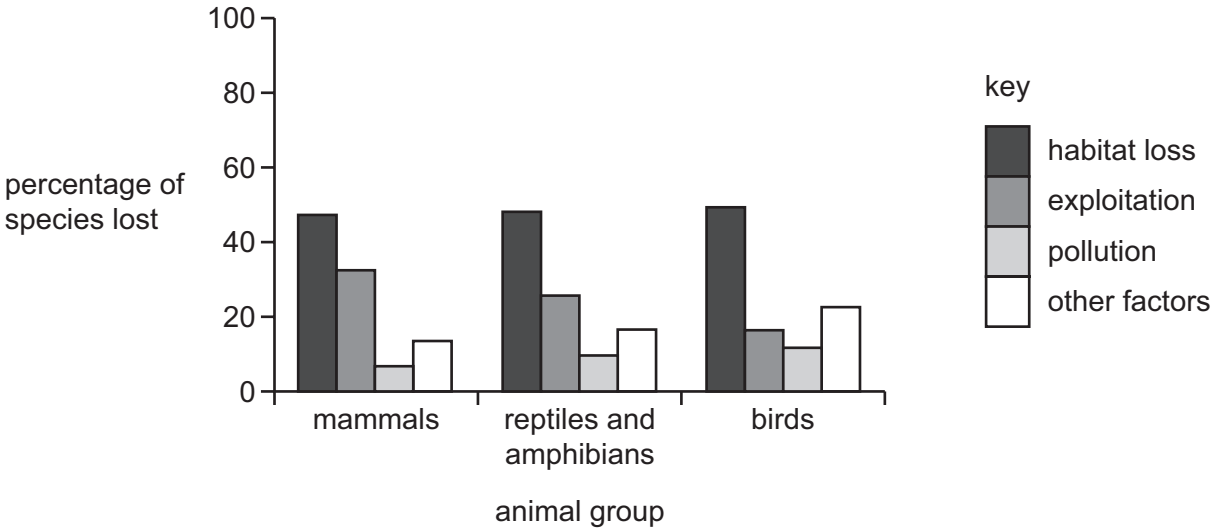
View solution

Which letter identifies the lag phase in this sigmoid curve?



37 The graph shows the percentage of species lost, in three different animal groups, due to different human activities during the last ten years.

View solution



Which activity has caused the highest percentage of species loss overall?

A habitat loss

B exploitation

C pollution

D other factors

View solution

38 Why are bacteria useful in biotechnology and genetic modification?

1 They can make complex molecules.

2 They have a rapid reproduction rate.

3 They have cell walls.

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

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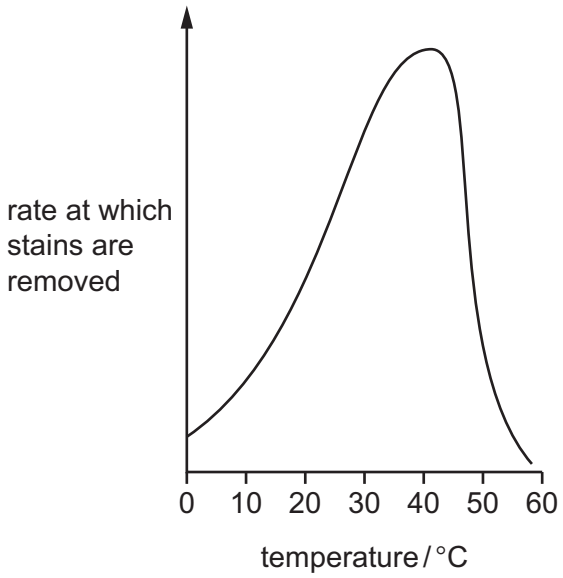
39 The graph shows how changing the temperature affects the rate of stain removal from clothes, using a biological washing powder.

View solution



What does the graph suggest about biological washing powders?

A Biological washing powders contain enzymes.

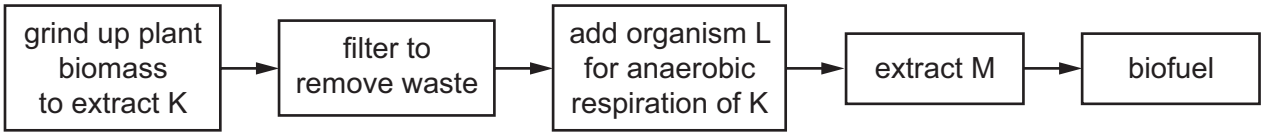
B Biological washing powders work best at all temperatures above 40 °C.

C The optimum temperature for the reaction is between 10 °C and 30 °C.

D There is a directly proportional relationship between the temperature used and the rate at which stains are removed.

40 The flow chart shows some of the processes involved in making biofuel.

View solution



What are represented by K, L and M in the diagram?

	K	L	M
A	ethanol	bacteria	glucose
B	glucose	yeast	ethanol
C	glucose	bacteria	water
D	lactic acid	yeast	glucose

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