Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/11**

Paper 1 Multiple Choice (Core) **May/June 2021**

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 **20** pages. Any blank pages are indicated.

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1 What is a characteristic of all living organisms?

A breathing

B circulation

C egestion

D sensitivity

2 The scientific names of some animals are listed.

1 *Camelus dromedarius*

2 *Camelus ferus*

3 *Equus ferus*

4 *Struthio camelus*

Which animals are in the same genus?

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

3 Scientists discover a new species of animal.

It has a segmented body with two pairs of legs on each segment.

To which group of animals does this new species belong?

A arachnids

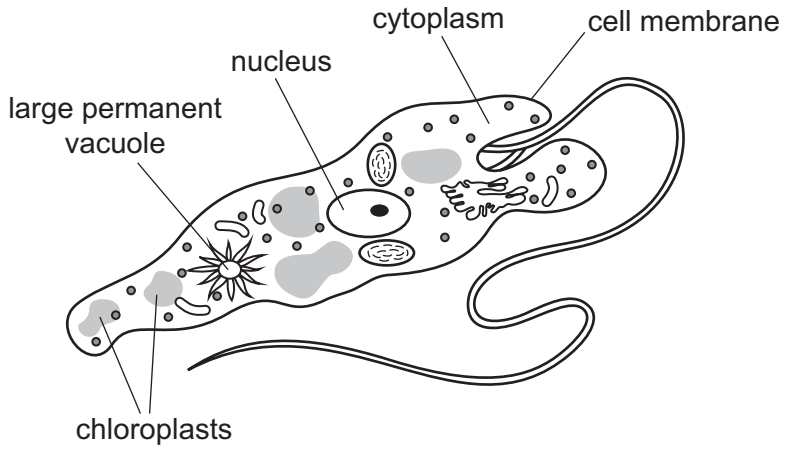
B crustaceans

C insects

D myriapods

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4 The diagram shows a single-celled organism called *Euglena*.



Which labelled structures would also be found in an animal cell?

A cell membrane, chloroplast, nucleus

B chloroplast, cytoplasm, nucleus

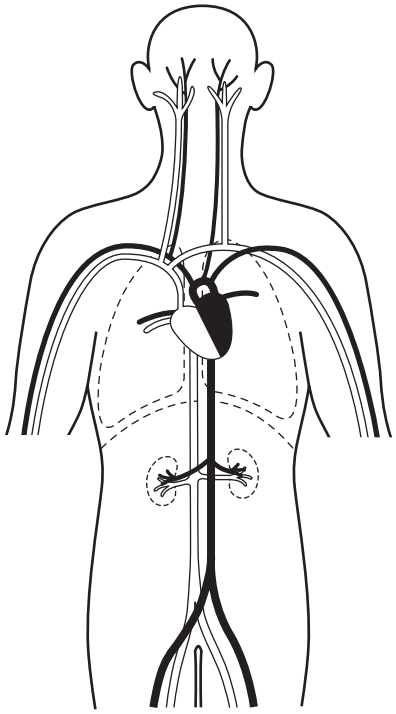
C cell membrane, cytoplasm, nucleus

D cell membrane, cytoplasm, large permanent vacuole

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[Turn over

5 The diagram shows some of the blood vessels and other structures in the human body.



The blood vessels shown are all parts of the same

A cell.

B organ.

C organ system.

D tissue.

6 A photograph shows a plant cell nucleus measuring 2 mm across.

If the magnification of the cell is ×500, what is the actual size of the nucleus?

A 0.00002 mm **B** 0.004 mm **C** 0.04 mm **D** 250 mm

7 By which process do oxygen and carbon dioxide move between cells and capillaries?

A breathing

B diffusion

C excretion

D respiration

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8 A cylinder of potato tissue was placed in a beaker of very salty water. After one hour the mass of the potato cylinder had decreased.

Why did this happen?

A Salt entered the plant tissue by active transport.

B Salt left the plant tissue by osmosis.

C Water entered the plant tissue by active transport.

D Water left the plant tissue by osmosis.

9 Which element is found in proteins but **not** carbohydrates?

A carbon

B hydrogen

C nitrogen

D oxygen

10 Starch is digested by amylase in the mouth, but it is not digested in the stomach.

What is the reason for this?

A All starch digestion is completed in the mouth.

B The pH in the stomach is not suitable for the amylase to work.

C The starch does not stay in the stomach long enough to be digested.

D The temperature in the stomach is not suitable for the amylase to work.

11 Which statement describes a catalyst?

A a substance that decreases the rate of a chemical reaction and is not changed by the reaction

B a substance that decreases the rate of a chemical reaction and is changed by the reaction

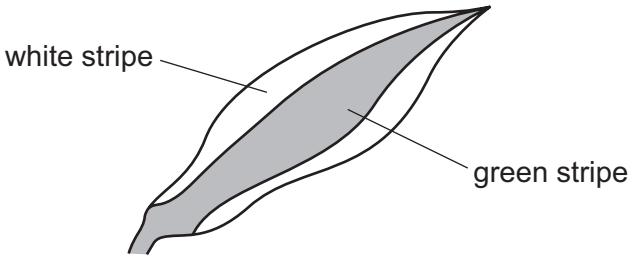
C a substance that increases the rate of a chemical reaction and is changed by the reaction

D a substance that increases the rate of a chemical reaction and is not changed by the reaction

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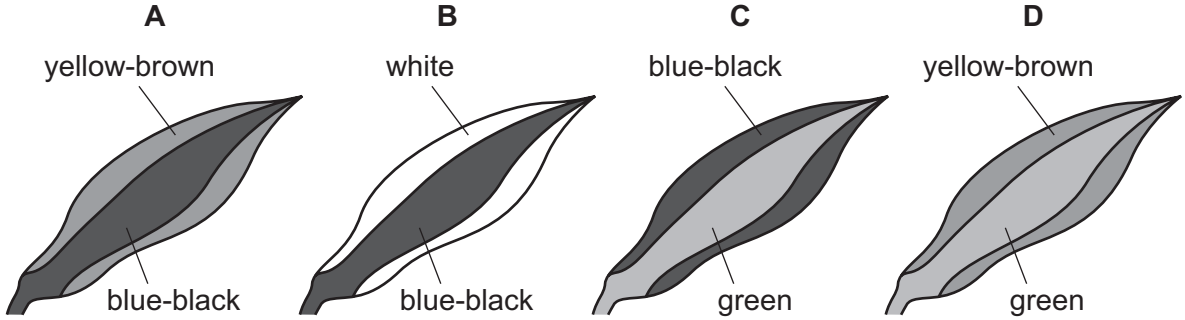
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12 A plant with striped leaves was kept in bright light for six hours.



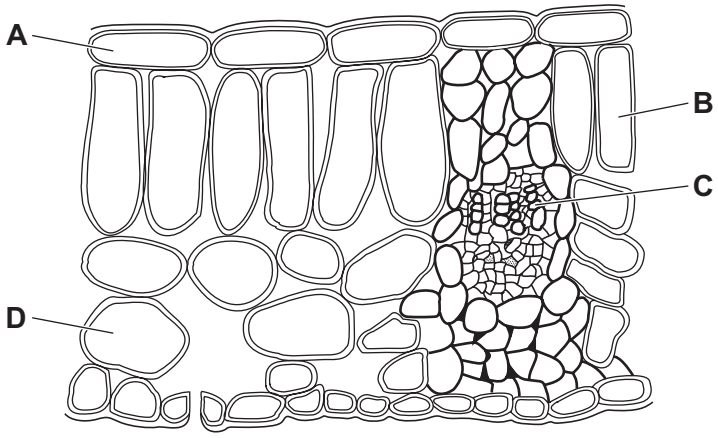
A leaf was taken from the plant and the chlorophyll was removed. The leaf was then tested for starch using iodine solution.

Which diagram shows the result of the test?



13 The diagram shows a section through the leaf of a plant.

Which label shows a palisade mesophyll cell?



14 In humans, where does most of the absorption of digested food take place?

A colon

B kidney

C liver

D small intestine

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15 What are the products when proteins are broken down?

A amino acids

B fatty acids

C glycerol

D simple sugars

16 Where does **most** of the absorption of water take place in the alimentary canal?

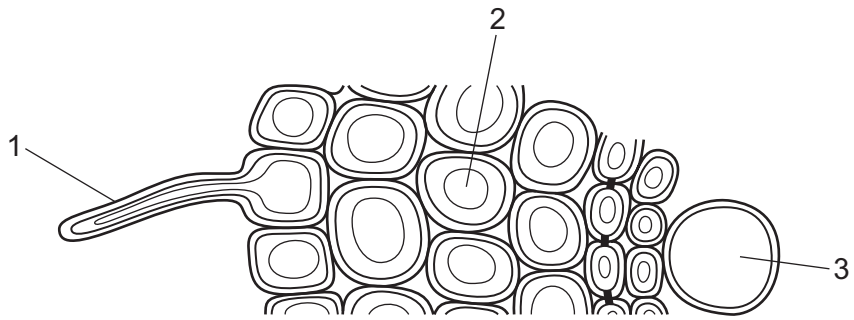
A colon

B oesophagus

C small intestine

D stomach

17 The diagram shows part of a cross-section of a root.



What are cells 1, 2 and 3?

	1	2	3
A	root cortex cell	root hair cell	mesophyll cell
B	root hair cell	root cortex cell	xylem
C	root hair cell	root cortex cell	mesophyll cell
D	root cortex cell	root hair cell	xylem

18 A plant shoot is placed in a solution of dye.

The dye moves up the stem.

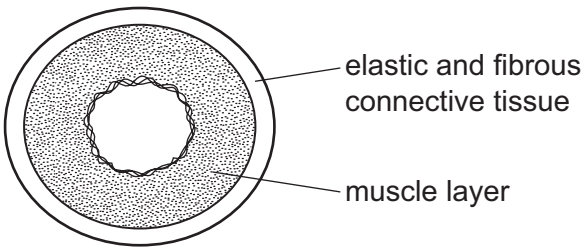
Under which conditions will the dye move most slowly?

	temperature	humidity
A	high	high
B	high	low
C	low	high
D	low	low

19 What are the main vessels carrying blood to and from the kidney?

	to kidney	from kidney
A	pulmonary artery	pulmonary vein
B	pulmonary vein	pulmonary artery
C	renal artery	renal vein
D	renal vein	renal artery

20 The diagram shows a cross-section through a human blood vessel.



Which type of blood vessel does the diagram show?

A an artery

B a capillary

C a vein

D a ventricle

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21 What is a function of some white blood cells?

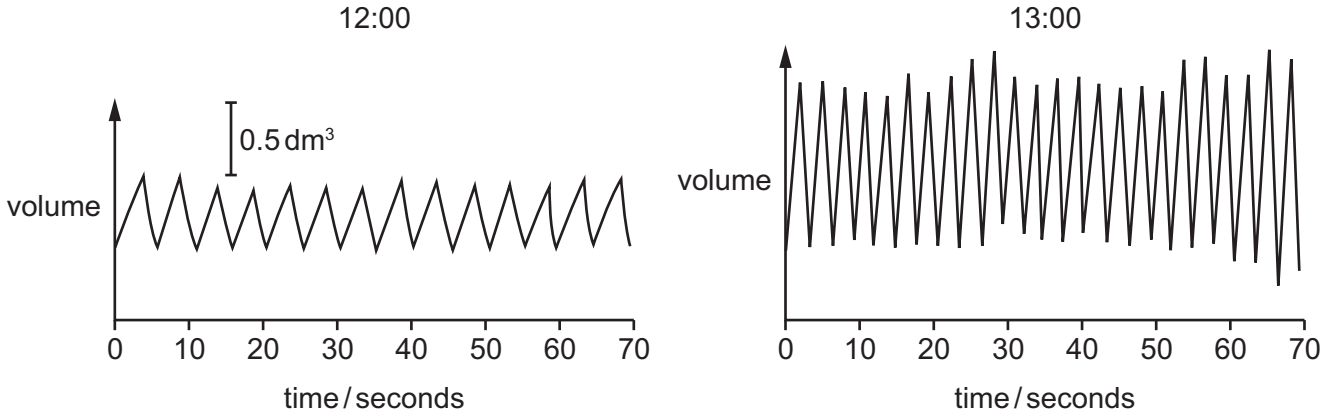
A to carry glucose

B to carry oxygen

C to produce antibiotics

D to produce antibodies

22 The diagrams show the depth and rate of breathing in a person at 12:00 and 13:00.



What happens to the person's breathing between 12:00 and 13:00?

	depth of breathing	rate of breathing
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

23 The list shows some processes that take place in a human body.

1 production of new red blood cells

2 transmission of nerve impulses from the eyes to the brain

3 diffusion of gases into and out of the lungs

Which processes use energy released by respiration?

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

24 What is produced by anaerobic respiration in humans?

	alcohol	carbon dioxide	lactic acid
A	✗	✓	✓
B	✓	✓	✗
C	✗	✗	✓
D	✓	✗	✗

key
✓ = yes
✗ = no

25 Which statement about urea is correct?

A Urea is formed from excess amino acids in the kidneys and excreted by the liver.

B Urea is formed from excess glucose in the liver and egested by the kidneys.

C Urea is formed from excess glucose in the kidneys and egested by the liver.

D Urea is formed from excess amino acids in the liver and excreted by the kidneys.

26 What is the sequence of neurones connecting a receptor to an effector in a reflex arc?

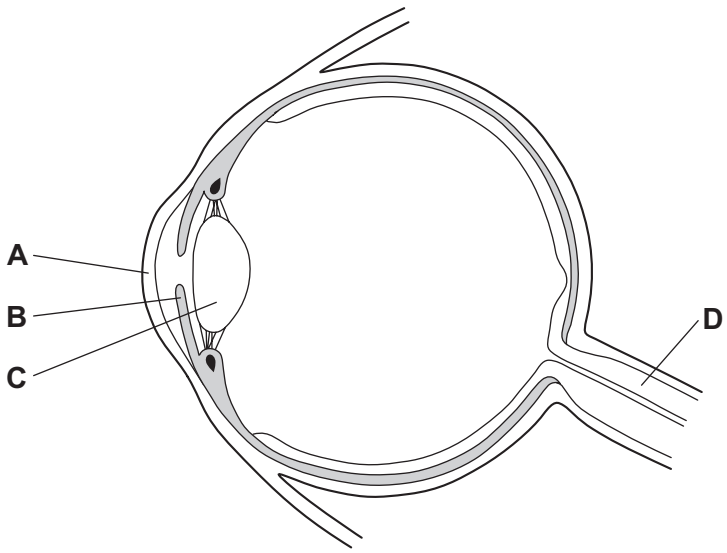
A motor → relay → sensory

B motor → sensory → relay

C sensory → motor → relay

D sensory → relay → motor

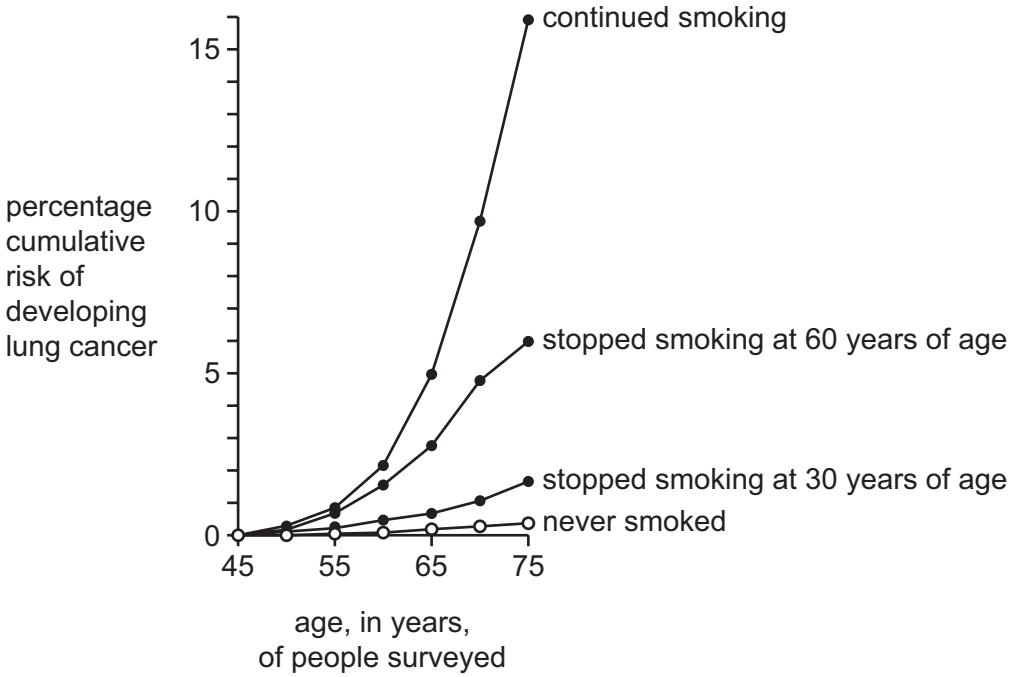
27 What controls how much light enters the eye?



28 Which row matches each hormone to its function?

	causes the growth of facial hair	reduces blood glucose concentration	repairs the lining of the uterus	widens the pupils
A	oestrogen	insulin	testosterone	adrenaline
B	oestrogen	insulin	insulin	testosterone
C	testosterone	adrenaline	insulin	oestrogen
D	testosterone	insulin	oestrogen	adrenaline

29 Scientists carried out a survey on the effect of giving up smoking on the risk of developing lung cancer. The results are shown in the graph.



The scientists made three conclusions:

1 Stopping smoking reduces the risk of developing lung cancer.

2 Age increases the risk of lung cancer for smokers and non-smokers.

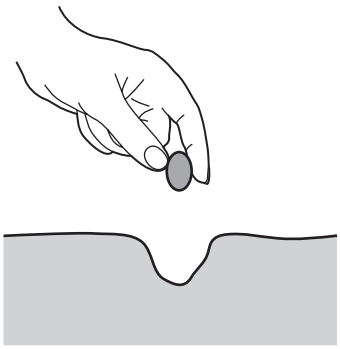
3 The earlier people stop smoking, the lower the risk.

Which conclusions are correct?

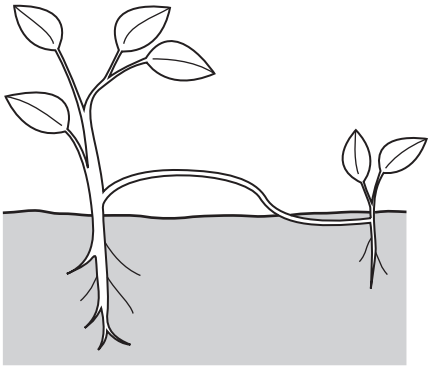
A 1, 2 and 3 **B** 1 and 2 only **C** 1 and 3 only **D** 2 and 3 only

30 A gardener wants to produce many genetically identical plants from a single plant.

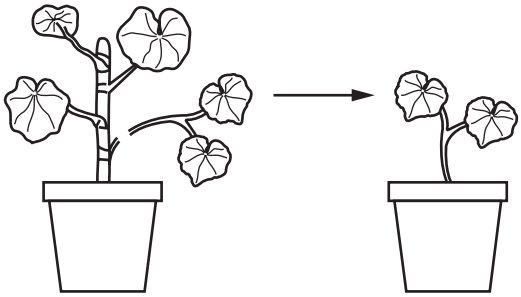
The diagram shows different methods of growing new plants.



1 planting seeds



2 runners



3 stem cuttings

Which methods will produce plants that are genetically identical to the parent plant?

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

31 Which structure in the male reproductive system makes the fluid for sperm to swim in?

A penis

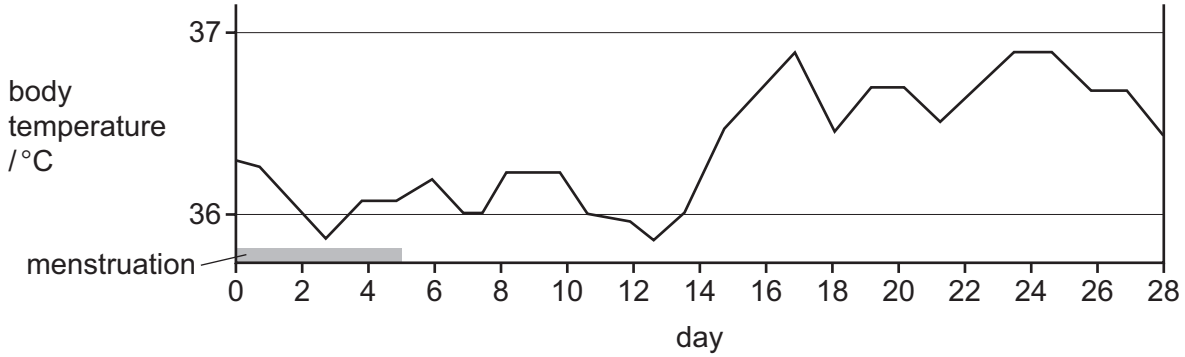
B scrotum

C prostate gland

D testis

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32 The graph shows a woman's body temperature during the menstrual cycle.



On which days is the woman **most** likely to become pregnant?

A days 0–5

B days 6–12

C days 13–18

D days 19–28

33 What is the transmission of genetic information from generation to generation called?

A fertilisation

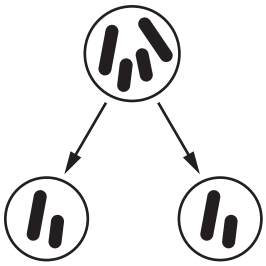
B inheritance

C meiosis

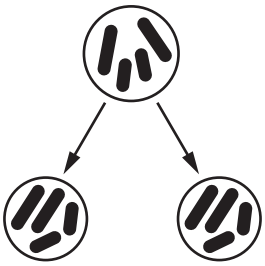
D reproduction

34 Which diagram shows the results of the process of mitosis?

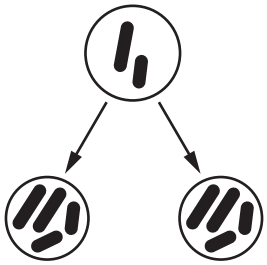
A



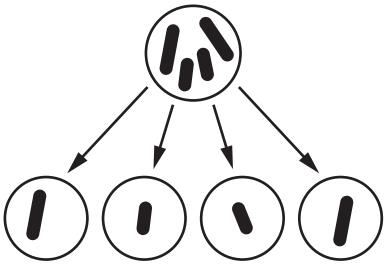
B



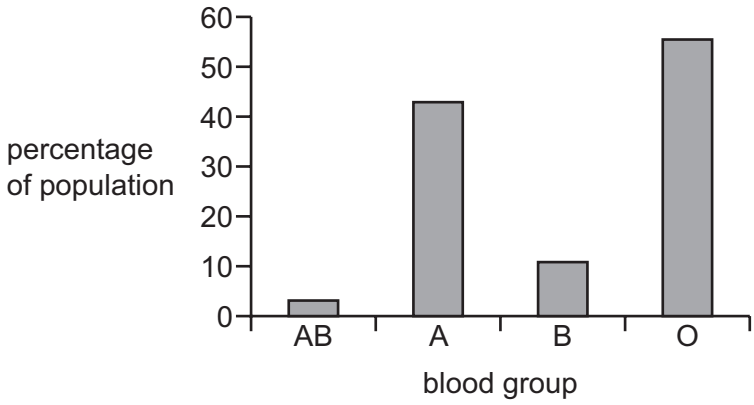
C



D



35 The graph shows the distribution of blood groups in one area.



This is an example of discontinuous variation.

Which statement about discontinuous variation is correct?

A There is a range of genotypes between two extremes.

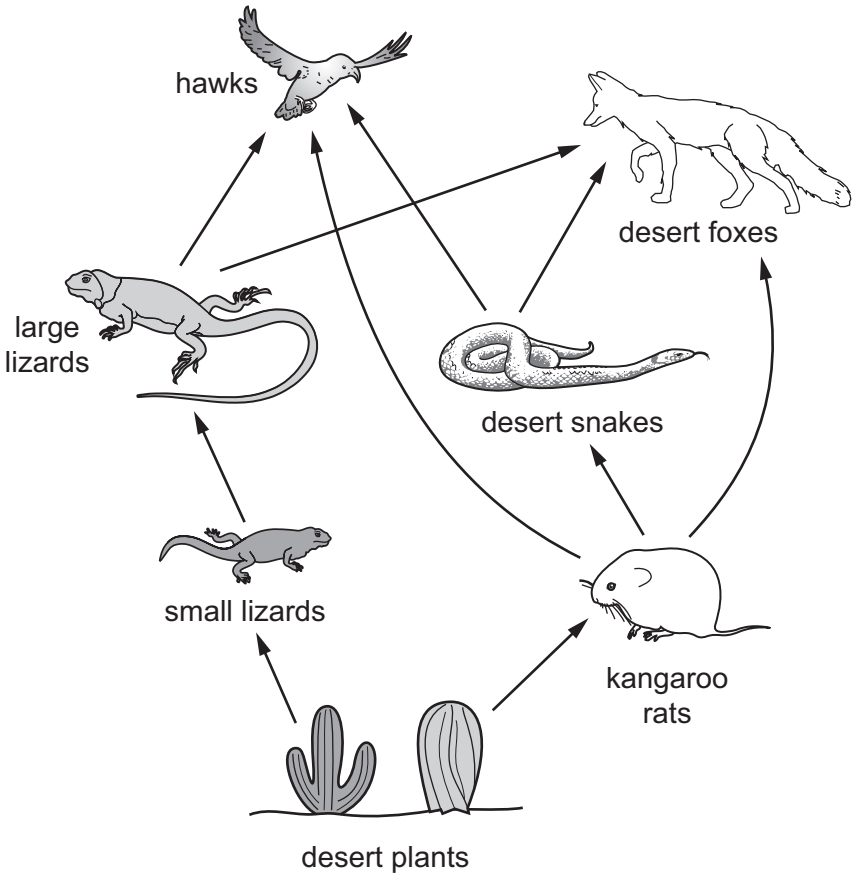
B There is a range of phenotypes between two extremes.

C There are intermediates between the phenotypes.

D There are no intermediates between the phenotypes.

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36 The diagram shows a food web in a desert.



Which organisms are **all** secondary consumers?

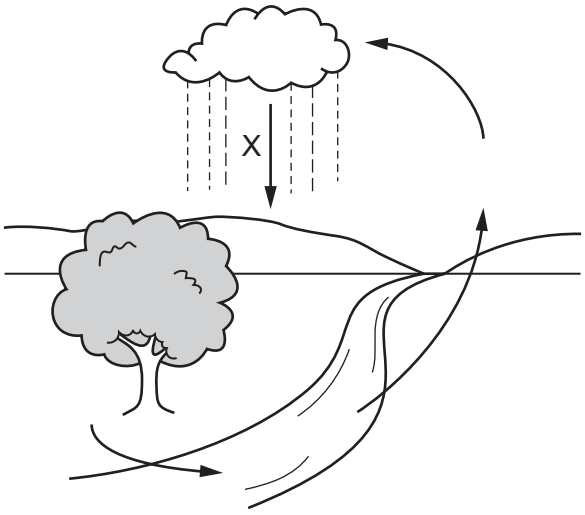
A desert foxes, hawks, large lizards and desert snakes

B desert foxes and hawks only

C kangaroo rats and small lizards

D large lizards and desert snakes only

37 The diagram shows stages in the water cycle.



Which process is represented by the letter X?

A condensation

B evaporation

C precipitation

D transpiration

38 What is an example of a population?

A all the arthropods in a pond

B all the crocodiles in a river

C all the plants in a wood

D all the zebras that lived from 1990–2010

39 What is a use of pectinase in the food industry?

A to extract juice from fruit

B to make biofuels

C to make biological washing powders

D to make bread rise

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40 Which factors are believed to have contributed to the rise in sea levels?

A pollution of the air by carbon dioxide only

B pollution of the air by carbon dioxide and methane

C pollution of the sea by plastics only

D pollution of the sea by insecticides and nuclear fall-out

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