Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/11**

Paper 1 Multiple Choice (Core) **May/June 2022**

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 All living organisms release energy from nutrient molecules within their cells.

What is the name of this characteristic?

A growth

B nutrition

C respiration

D sensitivity

2 The horse, *Equus ferus*, and the donkey, *Equus asinus*, are able to interbreed. The offspring they produce is called a mule.

Which statement is correct?

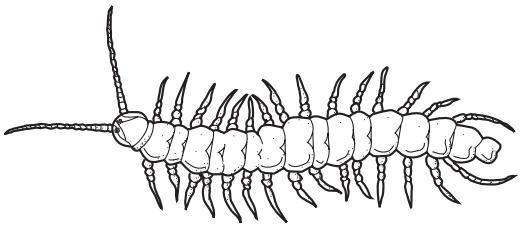
A The horse and the donkey are the same genus; the mule is infertile.

B The horse and the donkey are the same species; the mule is infertile.

C The horse and the donkey are the same genus; the mule is fertile.

D The horse and the donkey are the same species; the mule is fertile.

3 The diagram shows an organism.



Which type of arthropod is this organism?

A myriapod

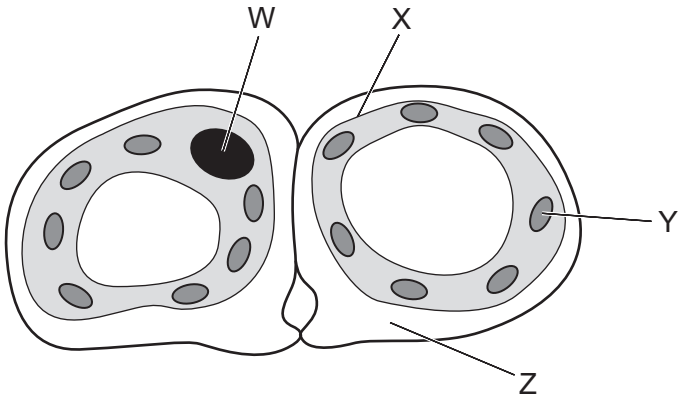
B insect

C crustacean

D arachnid

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4 The diagram shows a cross-section through two guard cells of a leaf.

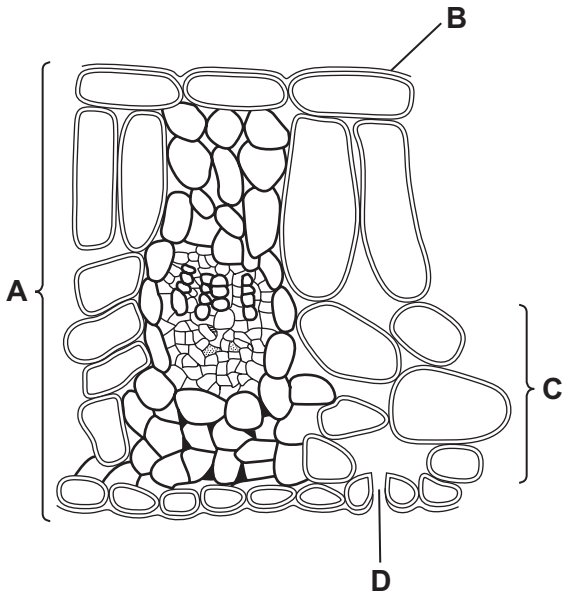


Which labelled structures would also be found in an animal cell?

A W and X **B** X and Y **C** Y and Z **D** Z and W

5 The diagram shows a cross-section through a leaf.

Which label shows a tissue?



6 A student found four different worms in a sample of soil and drew diagrams of them. The diagrams were drawn with different magnifications.

Which worm was the longest?

	length of diagram / mm	magnification
A	60	×3
B	70	×1
C	100	×2
D	120	×5

7 Which statement describes the net movement of particles during diffusion?

A from higher to lower concentration down a concentration gradient

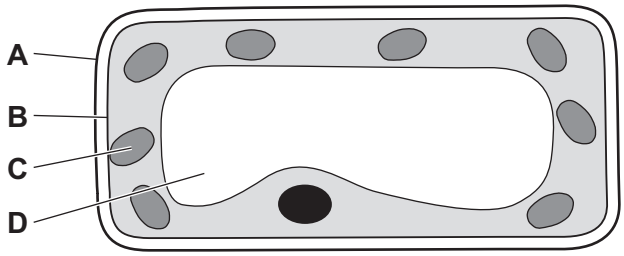
B from higher to lower concentration against a concentration gradient

C from lower to higher concentration down a concentration gradient

D from lower to higher concentration against a concentration gradient

8 The diagram shows a section through a mesophyll cell of a leaf.

Which part is partially permeable?



9 What are the smaller basic units of starch and glycogen molecules?

	starch	glycogen
A	amino acids	fatty acids and glycerol
B	amino acids	glucose
C	glucose	fatty acids and glycerol
D	glucose	glucose

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10 Some terms used to describe enzyme-controlled reactions are listed.

1 catalyst

2 product

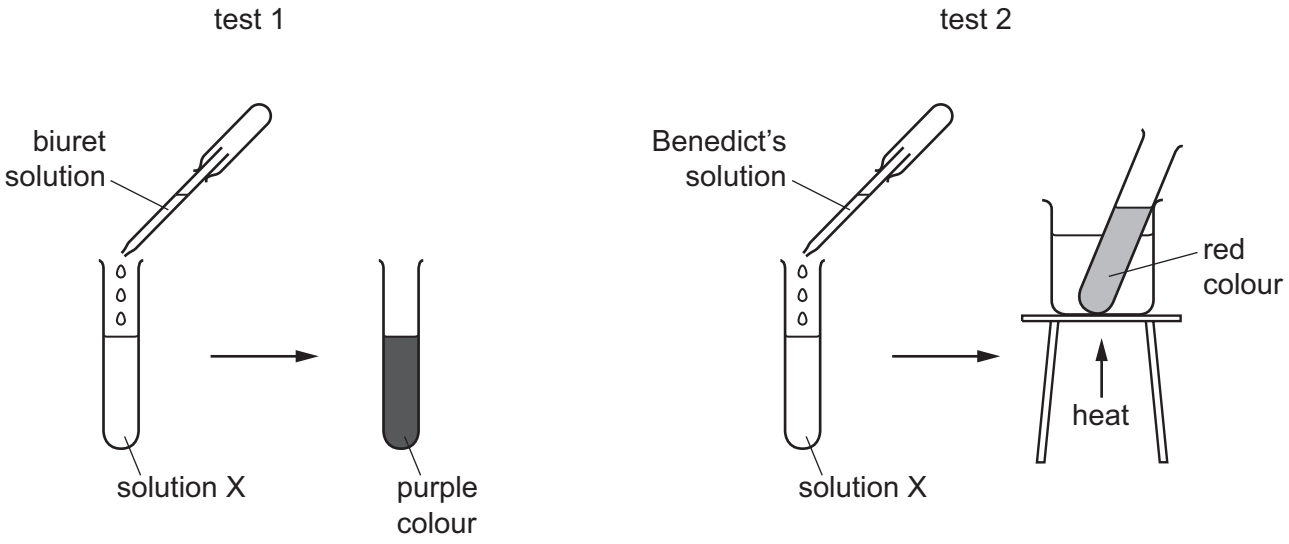
3 protein

4 substrate

Which terms describe an enzyme?

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

11 The diagram shows two food tests being carried out on solution X.



Which nutrients are present in solution X?

A protein and starch

B protein and sugar

C starch and fat

D starch and sugar

12 Which chemical is a product of photosynthesis that moves out of a green leaf through its stomata?

A carbon dioxide

B glucose

C oxygen

D water

13 Which tissues are found in vascular bundles?

A palisade mesophyll and phloem

B palisade mesophyll and spongy mesophyll

C phloem and xylem

D spongy mesophyll and xylem

14 What is the dietary importance of fibre in humans?

A for growth and repair of cells

B to help food move through the alimentary canal

C to maintain strong bones and teeth

D to provide energy

15 In which part of the alimentary canal does ingestion take place?

A anus

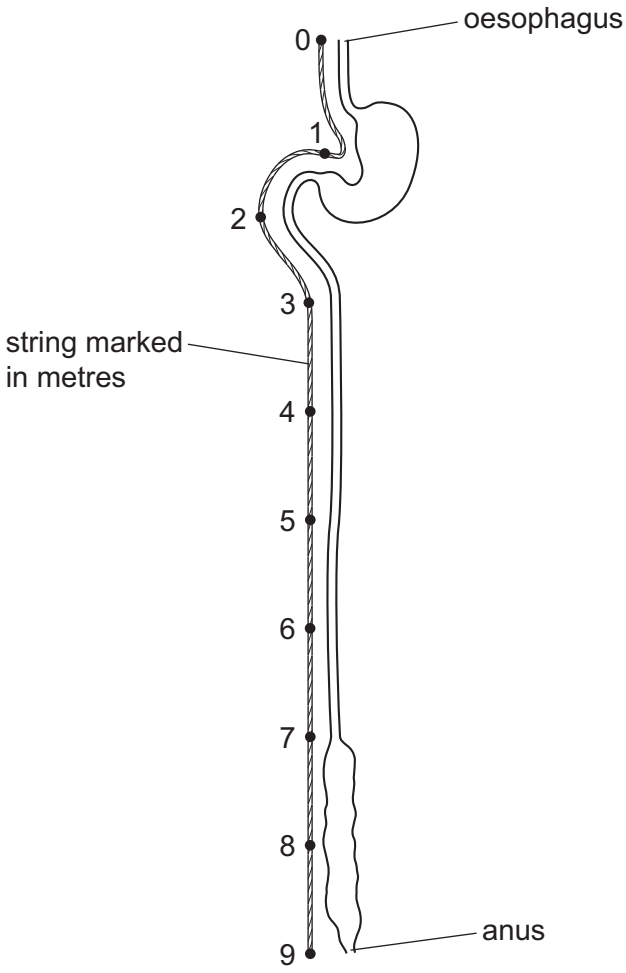
B liver

C mouth

D stomach

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16 The diagram shows the human alimentary canal, with a string marked in metres beside it.

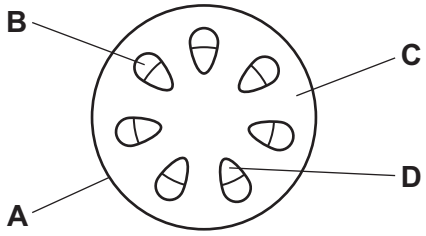


How long is the small intestine?

A 2 m **B** 6 m **C** 8 m **D** 9 m

17 A non-woody plant stem is placed in water containing a red dye. It is left for one day and then a section of the stem is examined using a microscope.

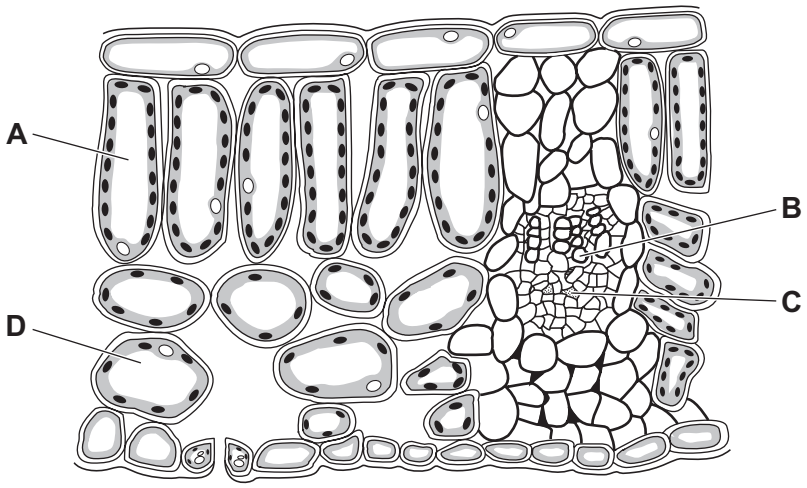
Which tissue is stained red?



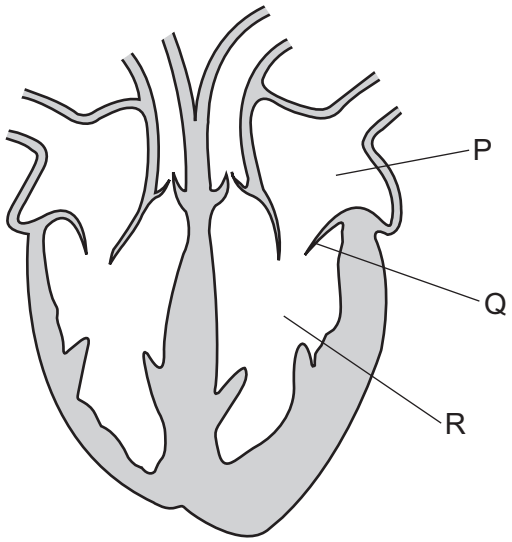
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18 The diagram shows a cross-section through a leaf.

From which cell will most water evaporate during transpiration?



19 The diagram shows a cross-section through the heart of a mammal.



Which row correctly identifies P, Q and R?

	P	Q	R
A	valve	right atrium	right ventricle
B	left atrium	valve	left ventricle
C	left ventricle	left atrium	valve
D	right atrium	valve	right ventricle

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20 Which process is slower than normal in a person with very few platelets?

A antibody formation

B blood clotting

C oxygen transport

D phagocytosis

21 The body has several defence mechanisms to protect against disease.

Which defence mechanism is a chemical barrier?

A hairs in the nose

B mucus

C skin

D white blood cells

22 A person lives in a climate where the air is very dry.

Which row correctly compares inspired air with expired air for this person?

	inspired air	expired air
A	higher carbon dioxide concentration	higher oxygen concentration
B	lower water vapour concentration	higher carbon dioxide concentration
C	lower oxygen concentration	higher water vapour concentration
D	lower carbon dioxide concentration	lower water vapour concentration

23 Substances involved in aerobic respiration are listed.

1 carbon dioxide

2 glucose

3 oxygen

4 water

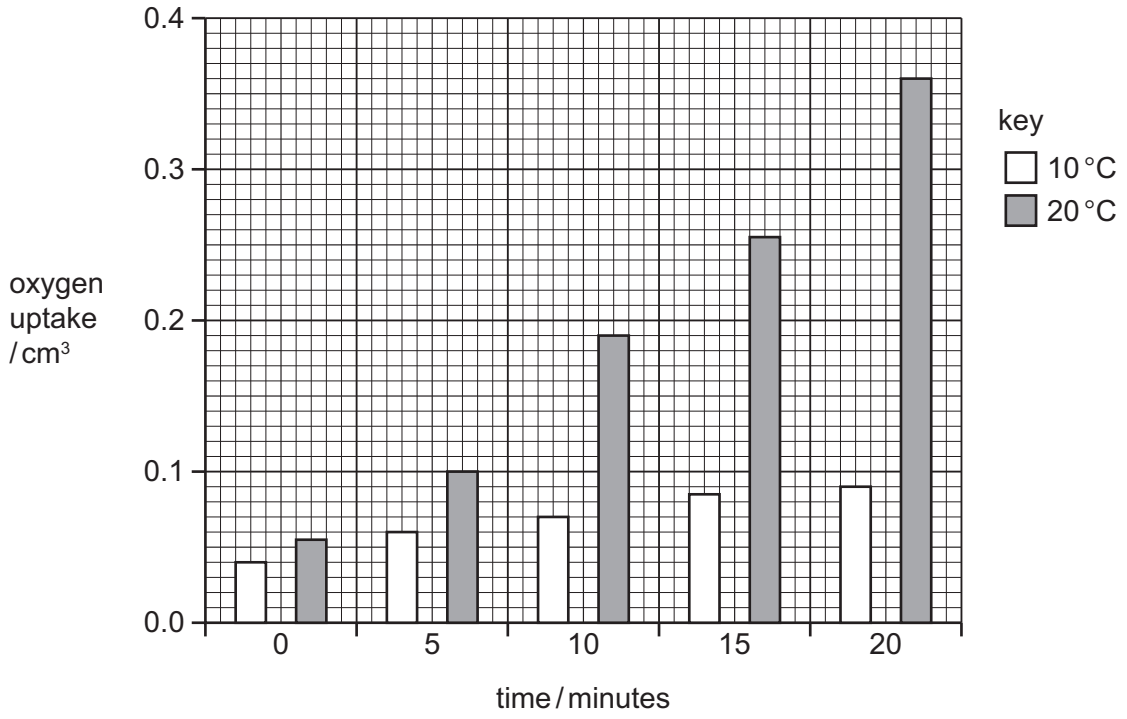
Which substances are used during aerobic respiration?

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

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24 The diagram shows the oxygen uptake by germinating seeds at two different temperatures.



At which time is the oxygen uptake at 20 °C four times greater than at 10 °C?

A 5 minutes

B 10 minutes

C 15 minutes

D 20 minutes

25 A person produced 1.75 dm^3 of urine on a cool day.

How will the volume and concentration of urine change on a hot day, if fluid intake is the same as on the cool day?

	volume	concentration
A	increases	decreases
B	increases	increases
C	decreases	decreases
D	decreases	increases

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26 Which hormone triggers the 'fight or flight' response?

A testosterone

B oestrogen

C adrenaline

D insulin

27 Which organ detects and coordinates the response to changes in internal body temperature?

A brain

B heart

C liver

D skin

28 Which statement describes the plant response known as phototropism?

A All parts of a plant grow towards light.

B All parts of a plant grow away from light.

C Plant shoots grow towards light.

D Plant roots grow towards light.

29 Why is excessive consumption of alcohol discouraged before someone operates machinery or drives a vehicle?

A Alcohol decreases reaction times.

B Alcohol increases reaction times.

C Alcohol is a stimulant drug.

D Alcohol is an addictive drug.

30 What is an example of sexual reproduction?

A one bacterial cell dividing to produce two daughter bacterial cells

B one banana plant being divided into two banana plants

C one pollen grain nucleus fusing with one ovule nucleus in a flower

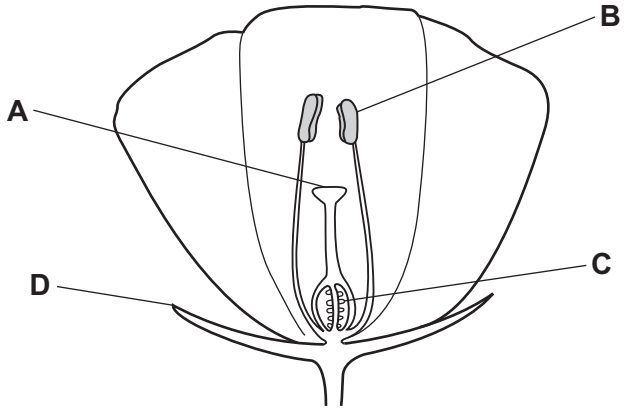
D one yeast cell producing buds which separate to become new yeast cells

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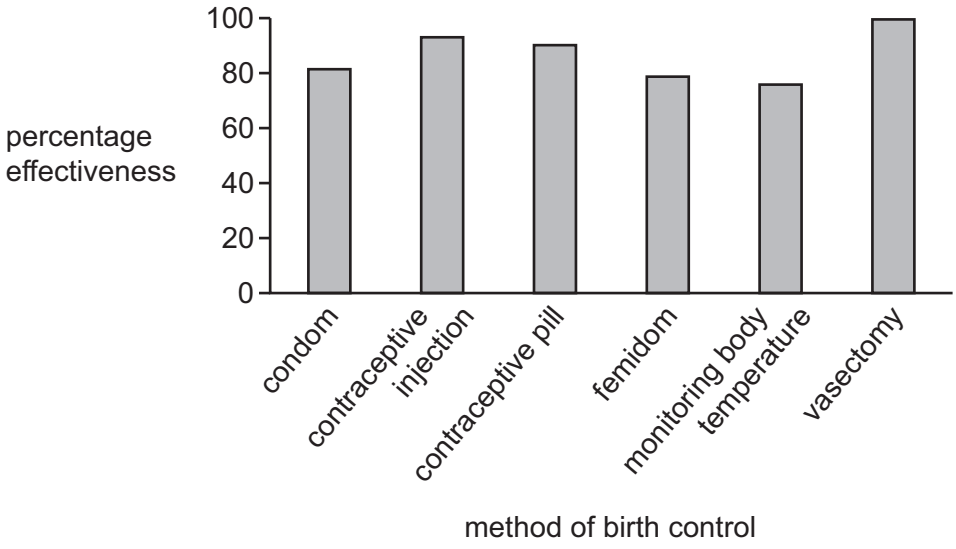
31 The diagram shows a cross-section of an insect-pollinated flower.

Which label is the stigma?



32 The effectiveness of different methods of birth control were studied in one country.

The graph shows the results of the study.



Which type of birth control is the most effective in this study?

A barrier

B chemical

C natural

D surgical

33 Beak shape in birds is controlled by genes passed from the parent birds to their offspring.

What is this an example of?

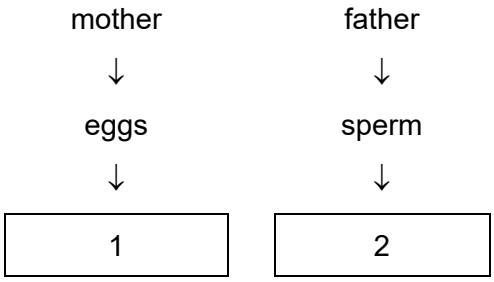
A selection

B fertilisation

C mitosis

D inheritance

34 A student used a diagram to explain the inheritance of sex in humans.



Which statements should she use to complete boxes 1 and 2?

	box 1	box 2
A	all have an X chromosome	half have an X chromosome and half have a Y chromosome
B	all have a Y chromosome	half have an X chromosome and half have a Y chromosome
C	half have an X chromosome and half have a Y chromosome	all have an X chromosome
D	half have an X chromosome and half have a Y chromosome	all have a Y chromosome

35 Which statement about selective breeding is correct?

A It does not involve humans.

B It involves a struggle for survival.

C It always involves only one parent.

D It involves parents that possess desirable features.

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36 Which process uses the principal source of energy input to biological systems?

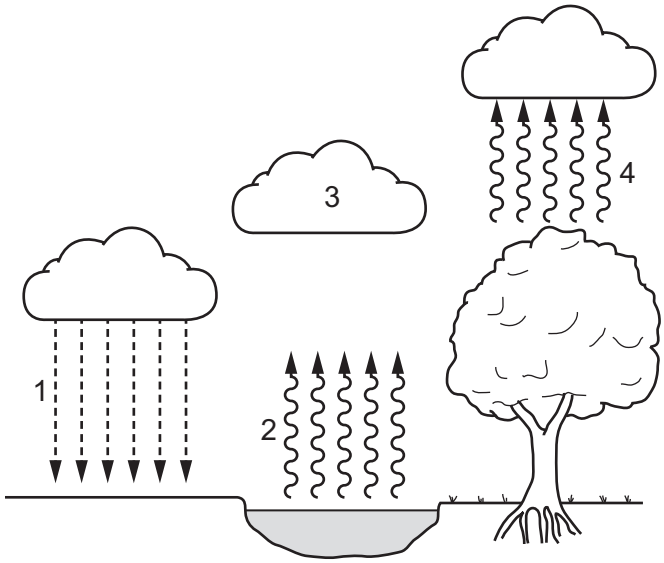
A ingestion

B decomposition

C photosynthesis

D respiration

37 The diagram shows the water cycle. Four different processes are numbered.



Which row identifies the processes correctly?

	condensation	evaporation	precipitation	transpiration
A	1	4	3	2
B	2	1	4	3
C	3	2	1	4
D	4	3	2	1

38 A herd of red deer live in a forest that contains snakes and a large variety of birds.

Which group of organisms is an example of a population?

A all the animals in the forest

B all the red deer in the forest

C all the organisms in the forest

D all the plants in the forest

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39 Which process makes use of a genetically engineered organism?

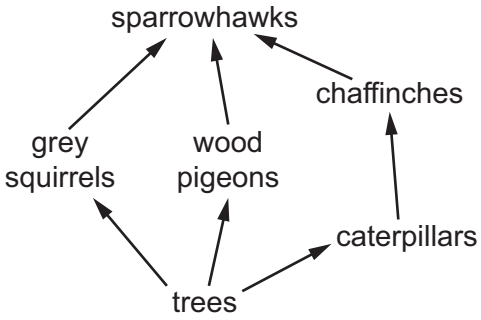
A using bacteria to produce insulin

B using enzymes in biological washing powders

C using pectinase in fruit juice production

D using yeast to produce ethanol

40 The food web shows the feeding relationships in a woodland.



If all the chaffinches in the food web die, which effect would this have?

A The amount of damage to trees will increase.

B The food supply for grey squirrels will increase.

C The number of wood pigeons will increase.

D The population of caterpillars will decrease.

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