Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/13**

Paper 1 Multiple Choice (Core) **October/November 2018**

45 minutes

Additional Materials: Multiple Choice Answer Sheet
Soft clean eraser
Soft pencil (type B or HB is recommended)

9885623081

READ THESE INSTRUCTIONS FIRST

Write in soft pencil.
Do not use staples, paper clips, glue or correction fluid.
Write your name, Centre number and candidate number on the Answer Sheet in the spaces provided unless this has been done for you.
DO **NOT** WRITE IN ANY BARCODES.

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 separate Answer Sheet.

Read the instructions on the Answer Sheet very carefully.

Each correct answer will score one mark. A mark will not be deducted for a wrong answer.
Any rough working should be done in this booklet.
Electronic calculators may be used.

This syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **17** printed pages and **3** blank pages.

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1 Which process occurs both in plants and in animals?

A excretion

B phagocytosis

C photosynthesis

D transpiration

2 What does the term *species* mean?

A a group of animals that reproduce asexually

B a group of organisms that can reproduce to produce fertile offspring

C a group of plants that reproduce to produce fertile offspring

D a group of vertebrates that reproduce sexually

3 Woodlice are arthropods with 14 jointed legs.

To which arthropod class do they belong?

A arachnids

B crustaceans

C insects

D myriapods

4 Sunflowers have yellow flowers.

Which cell structure is found in sunflower leaves but **not** in the petals of the flowers?

A cell membrane

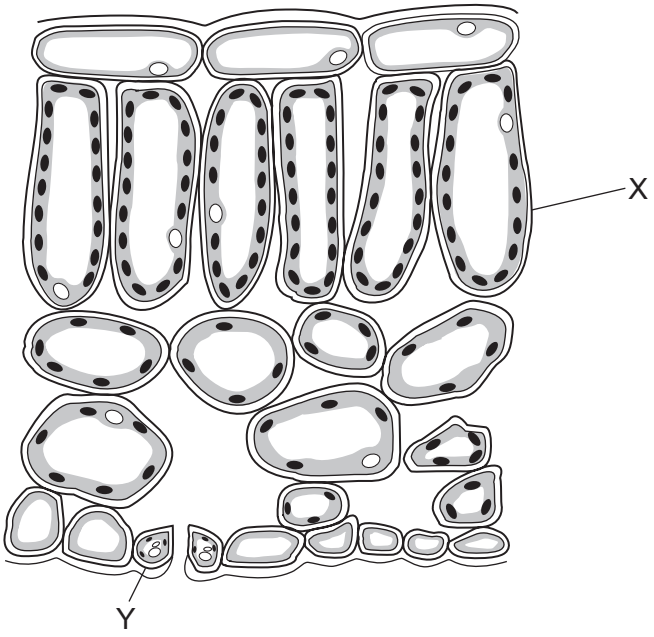
B cell wall

C chloroplast

D vacuole

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5 The diagram shows part of a leaf in cross-section.



Structures X and Y are both part of the same

A cell.

B organ.

C tissue.

D vessel.

6 A bacterial cell has a length of 40 mm when it is magnified by ×20 000.

What is the actual length of the bacterial cell?

A 0.0002 mm **B** 0.002 mm **C** 0.02 mm **D** 0.2 mm

7 How do carbon dioxide and oxygen move into and out of a mesophyll cell?

A active transport

B diffusion

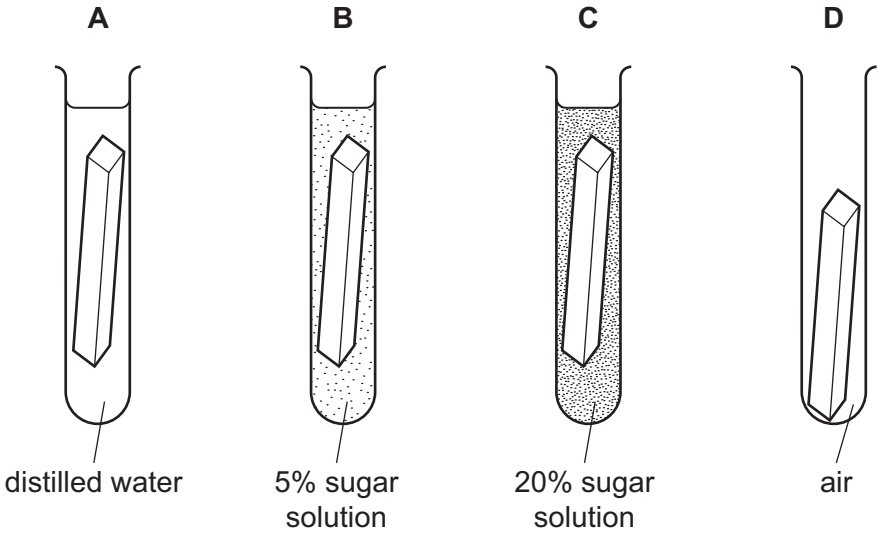
C respiration

D transpiration

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8 The diagram shows four identical pieces of potato in test-tubes. The potato pieces were left as shown for six hours.

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



9 The data show the concentrations of sugar and starch in an onion.

total sugar including reducing sugar / g per 100g	starch / g per 100g
3.7	0.0

The onion is tested with Benedict's solution and iodine solution.

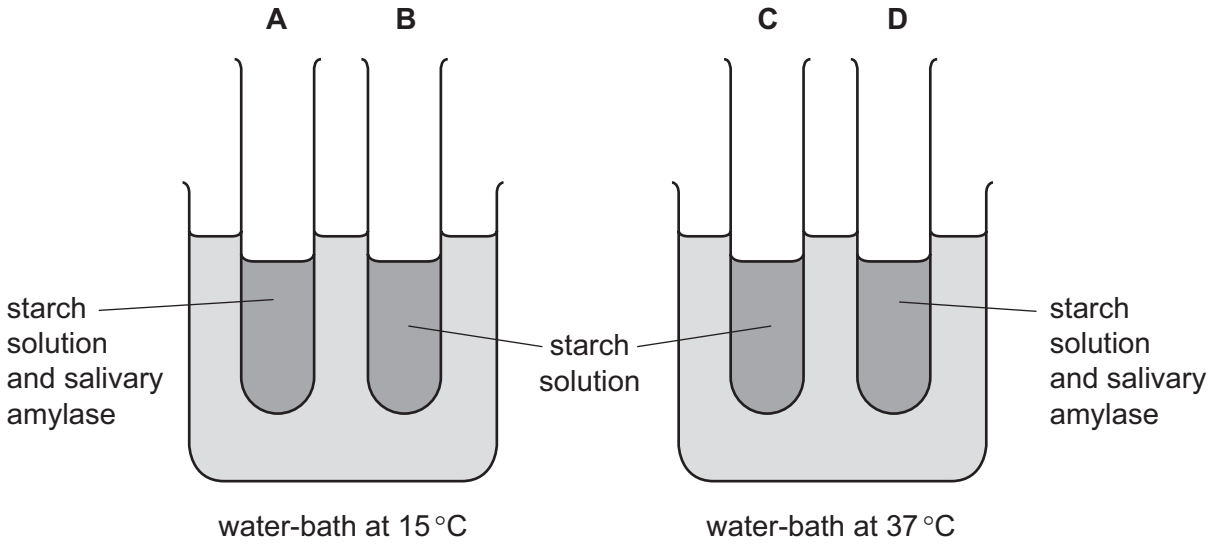
Which set of results is correct?

	Benedict's solution	iodine solution
A	blue	blue-black
B	blue	brown
C	brick red	blue-black
D	brick red	brown

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10 The apparatus shown is used for an experiment on starch digestion.

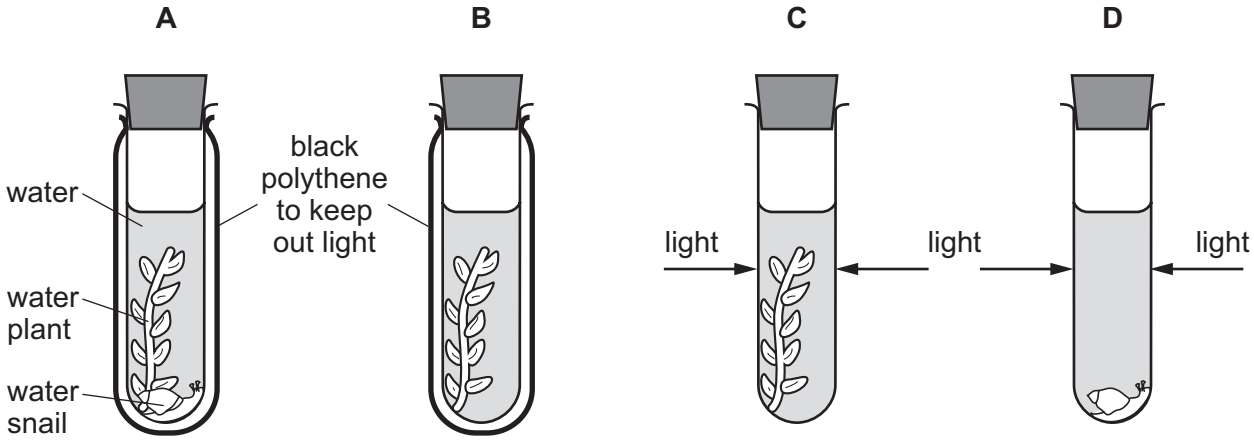
Which test-tube contains the most sugar after 20 minutes?



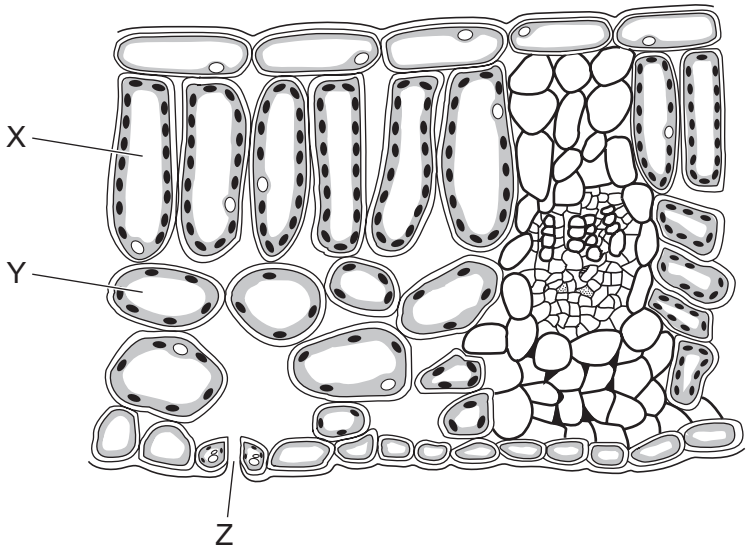
11 An experiment was carried out using the apparatus shown.

The carbon dioxide content of the water in each test-tube was measured at the start and again three hours later.

In which test-tube would there be a decrease in carbon dioxide content?



12 The diagram shows a cross-section of a leaf.



Which row shows the correct labels?

	palisade mesophyll cell	spongy mesophyll cell	stoma
A	X	Y	Z
B	X	Z	Y
C	Y	X	Z
D	Y	Z	X

13 What is the result of a diet lacking iron?

A bleeding gums

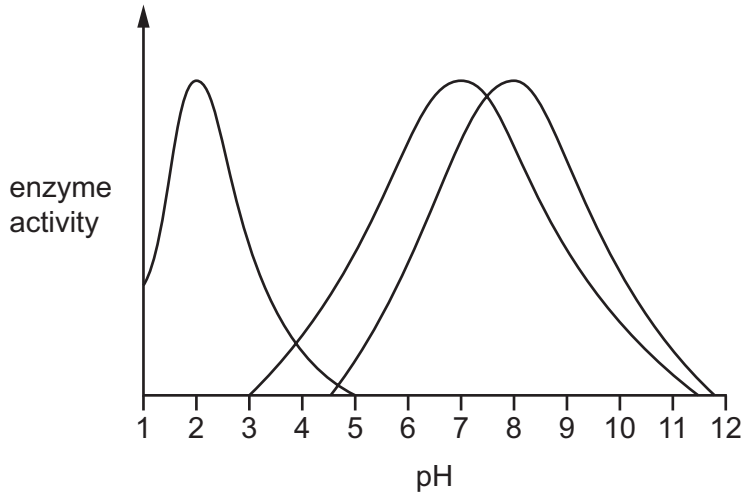
B poor wound healing

C reduced number of red blood cells

D weak bones and teeth

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14 The diagram shows the activity of salivary amylase, pancreatic lipase and stomach protease at different pH levels.

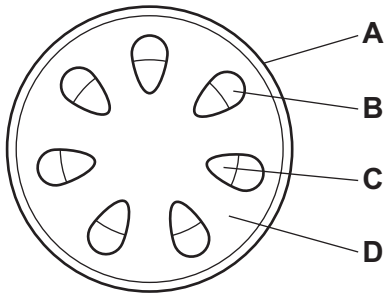


From the graph, what is the optimum pH for the protease enzyme?

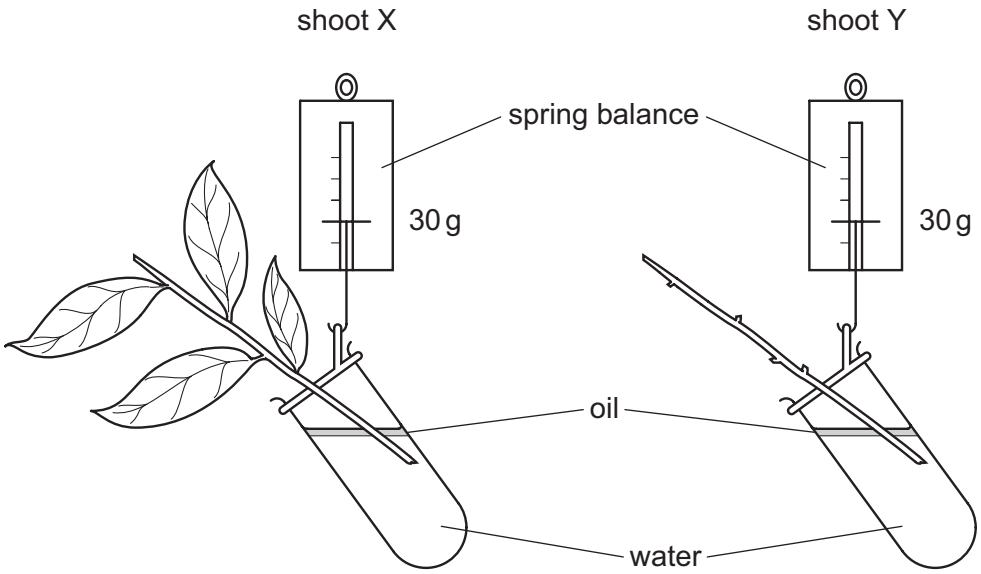
A 2.0 **B** 3.5 **C** 7.0 **D** 8.0

15 The diagram shows a section through the stem of a dicotyledonous plant.

Which part transports water and mineral ions?



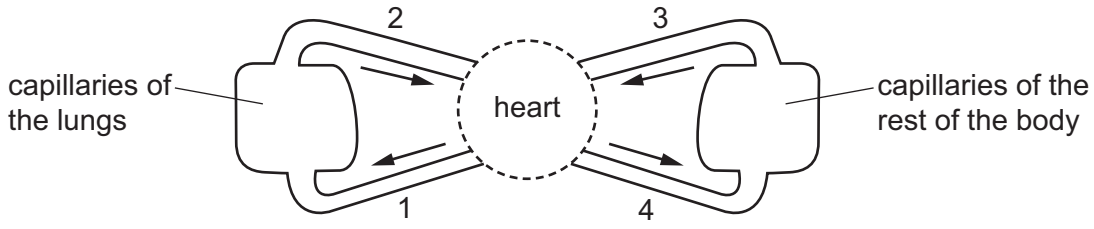
16 The diagram shows two shoots at the start of an experiment on transpiration.



What are the likely readings on the spring balances after three days?

	shoot X / g	shoot Y / g
A	25	25
B	25	30
C	30	25
D	30	30

17 The diagram shows a circulatory system.



Which vessels carry oxygenated blood?

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

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18 The body's first line of defence can prevent some pathogens from entering the body.

Which is a first line of defence?

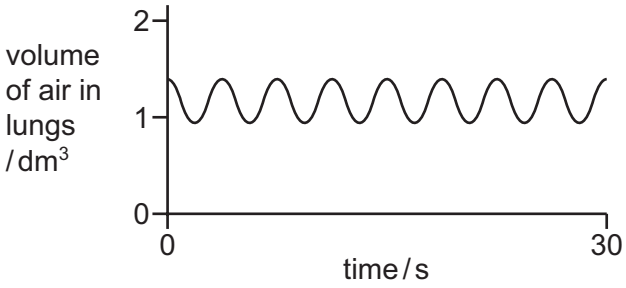
A antibody production

B mucus

C phagocytosis

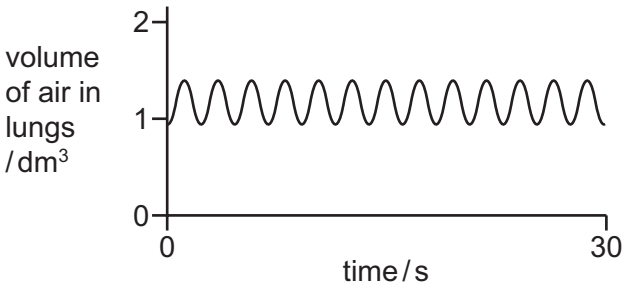
D vaccination

19 The graph shows changes in the volume of air in the lungs of a person at rest, over a period of 30 seconds.

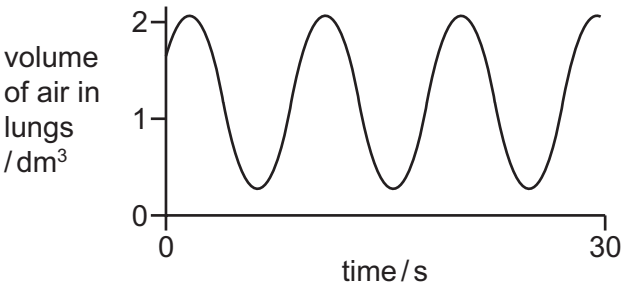


Which graph shows changes in the volume of air in the lungs of the same person immediately after they have done five minutes of vigorous exercise?

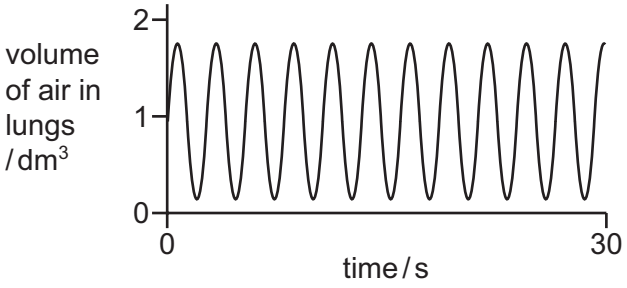
A



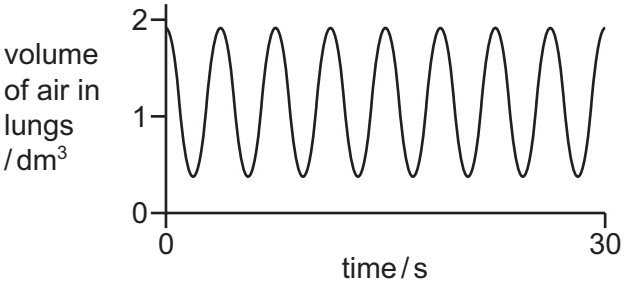
B



C



D



20 Glucose is required for respiration.

Which other molecule is required for aerobic respiration?

A carbon dioxide

B nitrogen

C oxygen

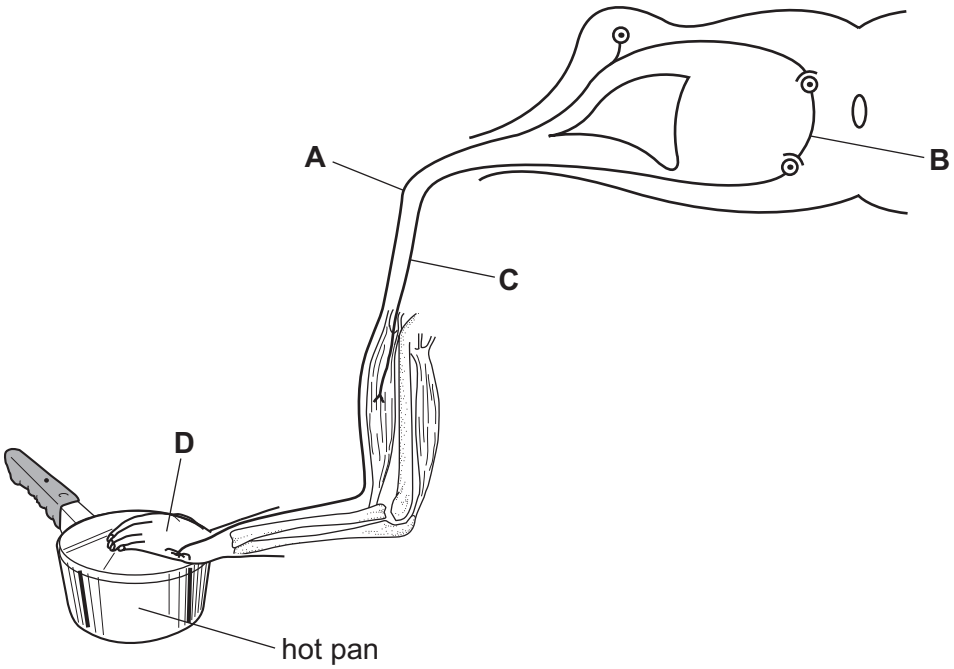
D water

21 Which row correctly shows the organ where each substance is excreted?

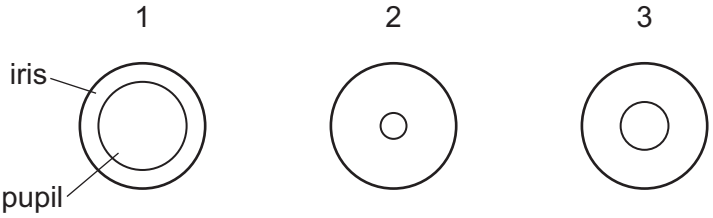
	carbon dioxide	excess water	salts	urea
A	kidneys	liver	lungs	lungs
B	liver	liver	liver	skin
C	lungs	kidneys	kidneys	kidneys
D	lungs	kidneys	liver	skin

22 The diagram shows a reflex arc.

Which label points to the sensory neurone?



23 The diagram shows the appearance of the iris and pupil in three different light conditions.



Which row shows the size of the pupil of the eye in each light condition?

	no light	moderate light	bright light
A	1	2	3
B	1	3	2
C	2	1	3
D	3	2	1

24 Some possible effects of injecting substances are listed.

1 It can cause addiction.

2 It can provide immunity to a disease.

3 It can cause HIV infection if needles are shared.

4 It can improve reaction times.

Which effects are associated with injecting heroin?

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

25 When asexual reproduction takes place, there will always be

A fertilisation.

B offspring genetically different from parent.

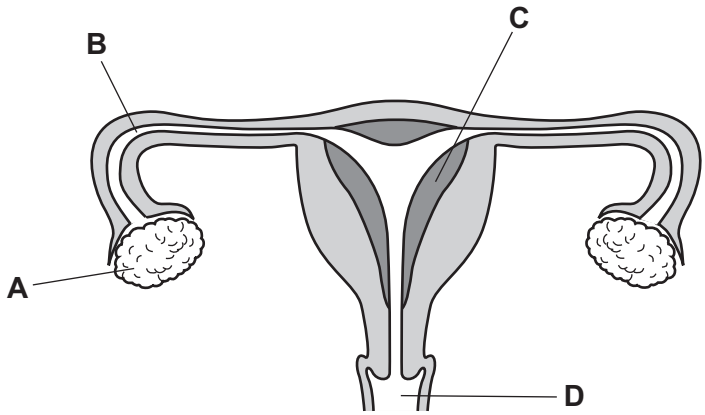
C only one parent required.

D production of a pollen tube.

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26 The diagram shows the female reproductive system.

Where does implantation normally occur?



27 Which precautions could help to prevent the spread of AIDS?

1 avoiding the mixing of blood

2 using a femidom

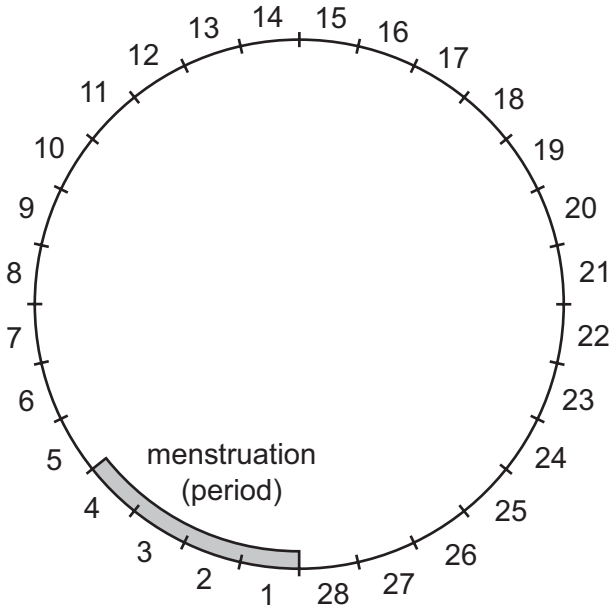
3 using the contraceptive pill

4 using a condom

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

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28 The diagram shows a timeline of a woman's menstrual cycle, which lasts for 28 days.



On which days of the menstrual cycle is a woman most likely to become pregnant?

A days 1–4

B days 7–10

C days 13–16

D days 20–23

29 Which name is given to different versions of a gene?

A allele

B chromosome

C length of DNA

D protein

30 Which cells in the human body are produced by meiosis?

A egg cells

B muscle cells

C nerve cells

D white blood cells

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[Turn over

31 Two pea plants with white flowers are crossed. Some of the offspring pea plants have red flowers and some have white flowers.

Which statement about the parent pea plants is correct?

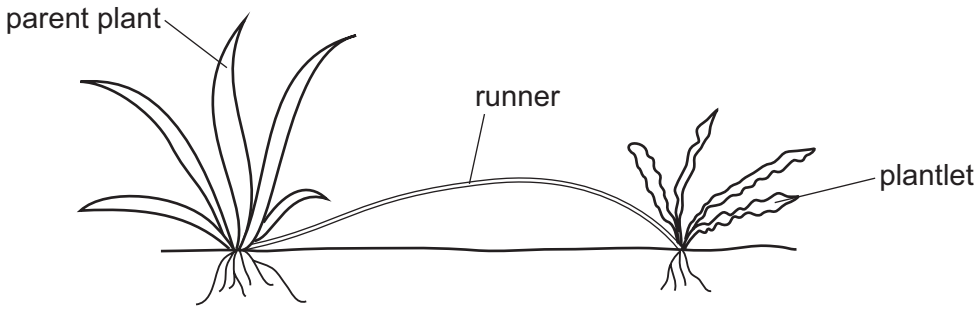
A Both parents are heterozygous.

B Both parents are homozygous.

C One parent is heterozygous and one parent is homozygous.

D The white allele for flower colour is recessive.

32 The diagram shows a plant reproducing asexually by growing a plantlet from a runner. The leaves of the plantlet appear different to the leaves of the parent plant.



Which statement explains the difference in the leaf shape of the plantlet?

A A mutation has occurred in the genes of the plantlet.

B The plantlet inherited the genes from the parent plant.

C The plant was produced by meiosis.

D The plantlet was produced by the fusion of gametes.

33 Part of the process of natural selection is described.

Organisms produce many .....1....., which results in competition for .....2..... . This means that organisms struggle for .....3..... .

Which row correctly completes gaps 1, 2 and 3?

	1	2	3
A	offspring	survival	resources
B	offspring	resources	survival
C	resources	survival	offspring
D	resources	offspring	survival

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34 Which organism in the food chain shown uses light energy?



35 What is the definition of a food chain?

A a line of different living things

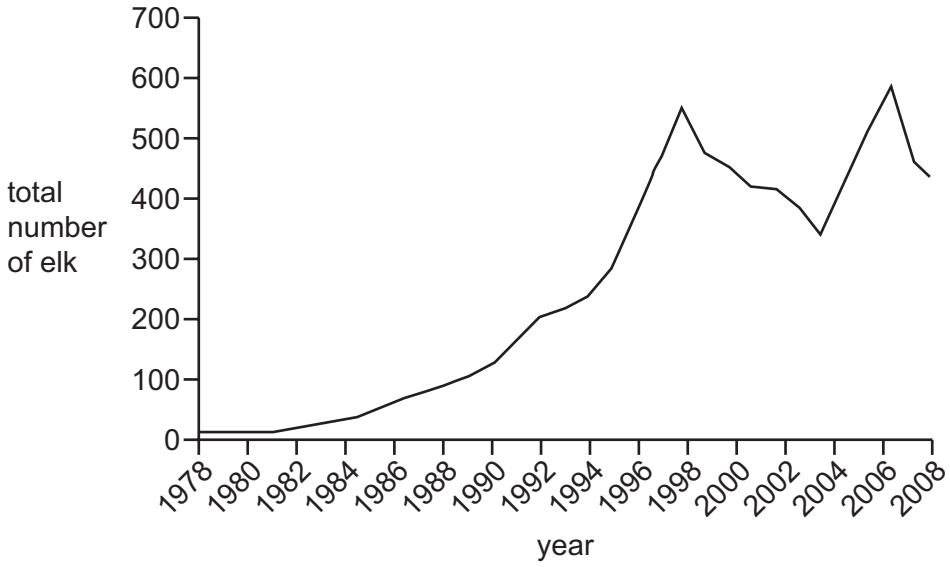
B taking in the Sun's energy

C the process of one living thing ingesting another living thing

D the transfer of energy from one organism to the next, beginning with a producer

36 Elk are mammals and they are herbivores.

The graph shows the total number of elk in a national park between 1978 and 2008.



What is a possible explanation for the change in the elk population between 1998 and 2000?

A decrease in disease

B decrease in hunting

C increase in food source

D increase in predation

37 Bacteria have the following features.

1 the ability to make complex molecules

2 the ability to reproduce quickly

3 have a cell membrane

4 have cytoplasm

Which features make bacteria useful in biotechnology?

A 1, 2, 3 and 4

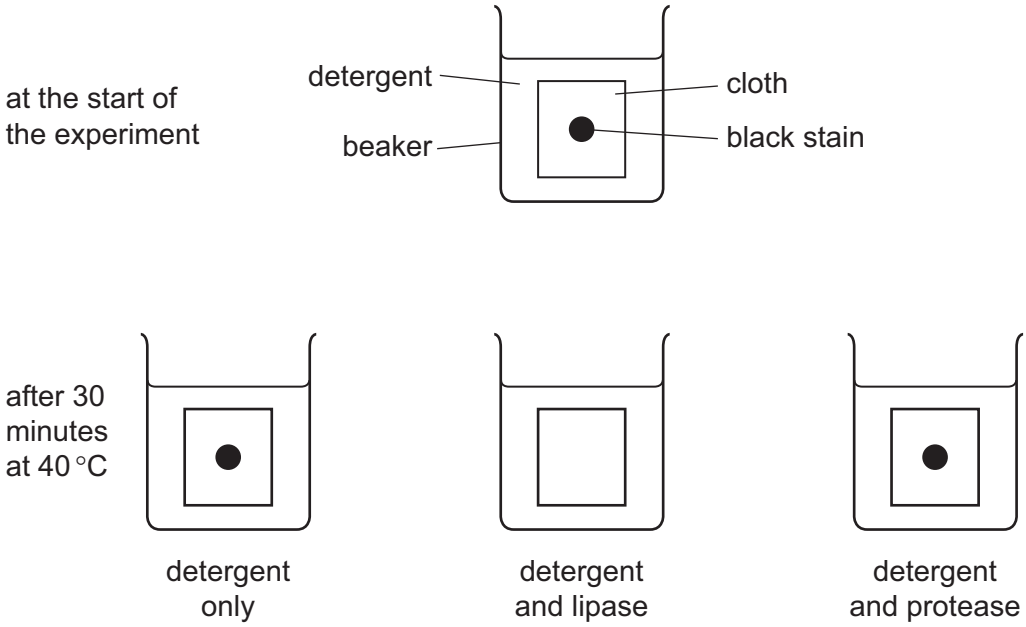
B 1, 2 and 3 only

C 1 and 2 only

D 1 only

38 Some washing powders contain enzymes as well as detergent.

In an experiment, three pieces of cloth were stained with the same substance. They were left in different beakers of detergent, some with added enzyme, at 40 °C for 30 minutes.



Which statement is correct for the results shown by this experiment?

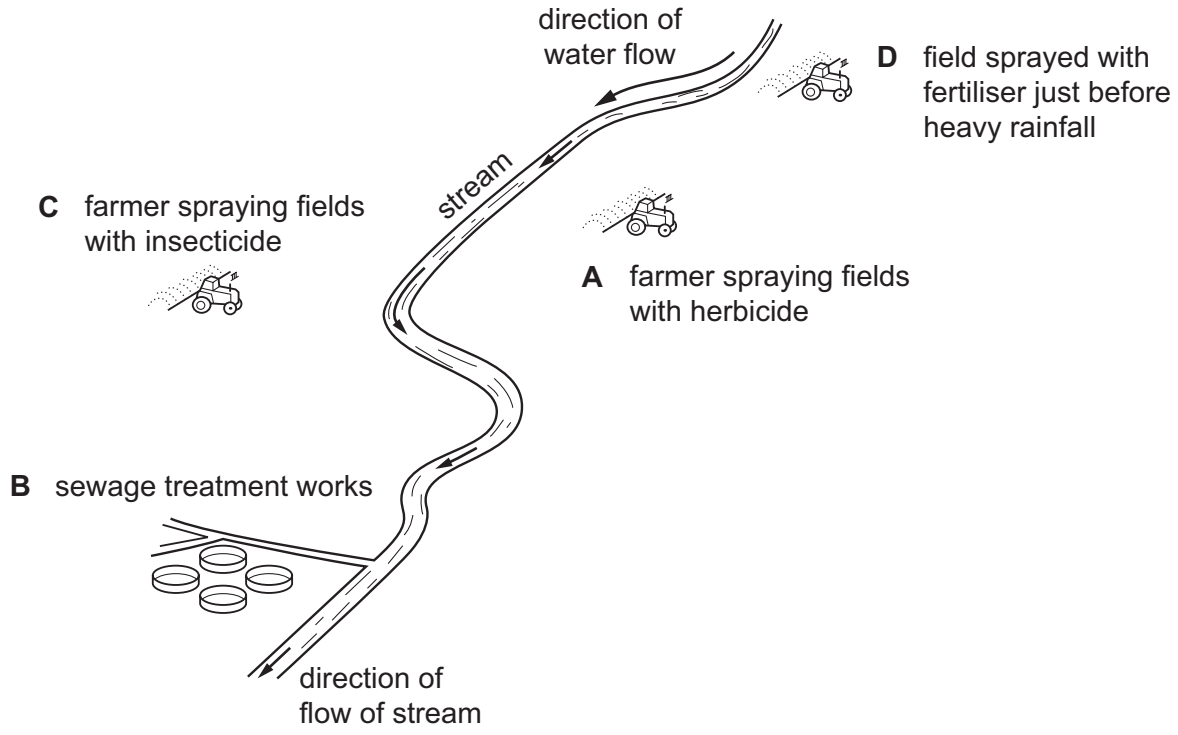
A The black stain contained carbohydrate.

B The black stain contained fat.

C The black stain contained protein.

D The black stain contained water.

39 Which activity is the **least** likely source of pollution?



40 What is used in the conservation of species?

A deforestation

B moving species to different habitats

C seed banks

D selective breeding

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