Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/11**

Paper 1 Multiple Choice (Core) **October/November 2019**

45 minutes

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

3567302215

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.

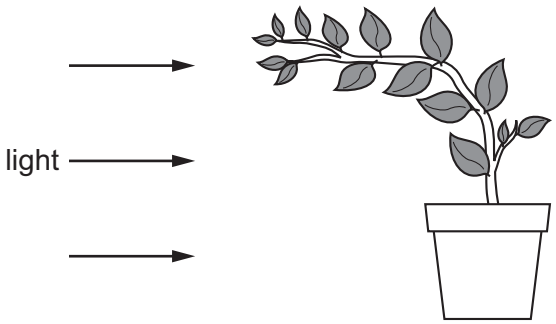
Each correct answer will score one mark. A mark will not be deducted for a wrong answer.
Any rough working should be done in this booklet.
Electronic calculators may be used.

This syllabus is regulated 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 The diagram shows a plant.



Which characteristic of living organisms is shown by the plant in the diagram?

A excretion

B reproduction

C respiration

D sensitivity

2 Using the binomial system of naming organisms, the name of the lion is *Panthera leo*.

Which statement is correct?

A The lion belongs to the kingdom *Panthera*.

B The lion belongs to the genus *Panthera*.

C The lion belongs to the species *Panthera*.

D The lion belongs to the genus *leo*.

3 The table shows the number of animals collected in a sample from a woodland and the groups to which they belong.

animal group	number in sample
arachnids	10
crustaceans	8
insects	80
myriapods	7

How many arthropods in total, in this sample, have six or eight legs?

A 15 **B** 88 **C** 90 **D** 98

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4 Which features do animal cells share with plant cells?

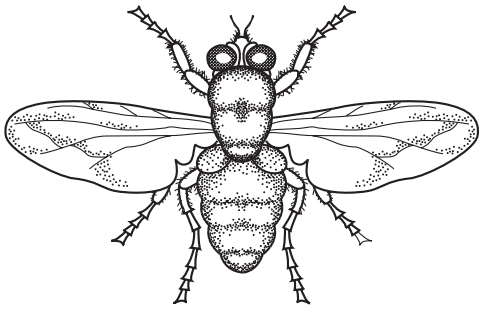
	chloroplast	cytoplasm	nucleus
A	✓	✓	✓
B	✓	✗	✓
C	✗	✓	✓
D	✗	✗	✗

key

✓ = yes

✗ = no

5 The diagram shows an animal.



Use the key to identify the animal.

1 wings present ..... go to 2

wings absent ..... go to 3

2 one pair of wings visible ..... **A**

two pairs of wings visible ..... **B**

3 three pairs of legs ..... **C**

four pairs of legs ..... **D**

6 At which level of organisation is a root?

A organ

B organ system

C organism

D tissue

7 What is an example of diffusion?

A dust particles being moved by ciliated cells in the trachea

B oxygen molecules moving into a red blood cell in the lungs

C pollen grains moving from anthers to stigmas in the wind

D red blood cells moving in a blood capillary in a muscle

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8 Which identifies the chemical elements found in proteins?

	carbon	hydrogen	oxygen	nitrogen
A	✓	✓	✓	✓
B	✓	✓	✓	✗
C	✓	✗	✓	✗
D	✗	✓	✗	✓

key
✓ = present
✗ = absent

9 What is the correct definition of the term *enzyme*?

A carbohydrates that act as biological catalysts

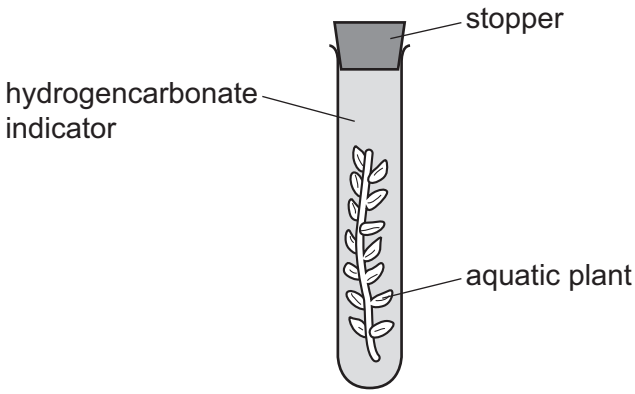
B carbohydrates that act as substrates

C proteins that act as biological catalysts

D proteins that act as substrates

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10 Two sealed test-tubes containing aquatic plants and hydrogencarbonate indicator were set up.



The indicator in the sealed test-tubes shows the concentration of dissolved carbon dioxide present.

concentration of carbon dioxide	colour of indicator
low	red
medium	orange
high	yellow

One of the sealed test-tubes was kept in the light for 24 hours and one of the sealed test-tubes was kept in the dark for 24 hours.

The results are shown in the table.

test-tube kept in	start colour	end colour
light	orange	red
dark	orange	yellow

What is the correct explanation of what has taken place?

A Photosynthesis and respiration both occur in the light, but the rate of photosynthesis is higher.

B Photosynthesis occurs in the light, but respiration does not.

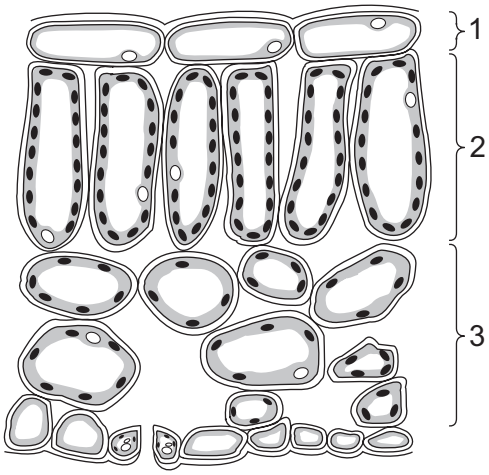
C Respiration can only occur when photosynthesis is not taking place.

D The amount of carbon dioxide used and produced in the light is equal.

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[Turn over

11 The diagram shows a leaf as seen in cross-section under the microscope.

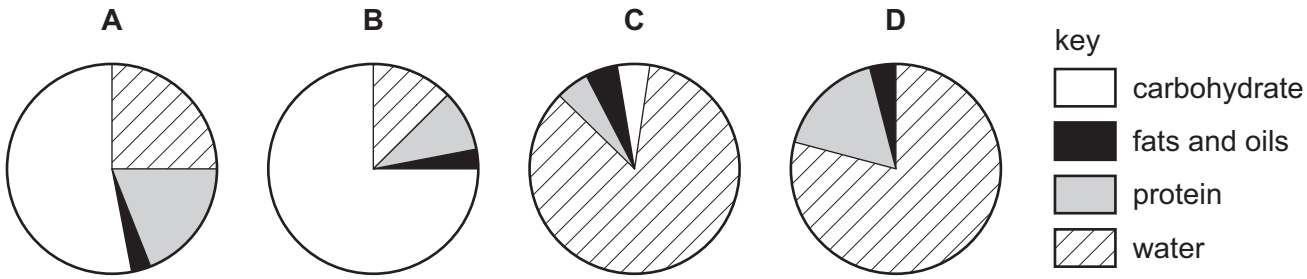


What are tissues 1, 2 and 3?

	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 The pie charts show the composition of 100 g of four different foods.

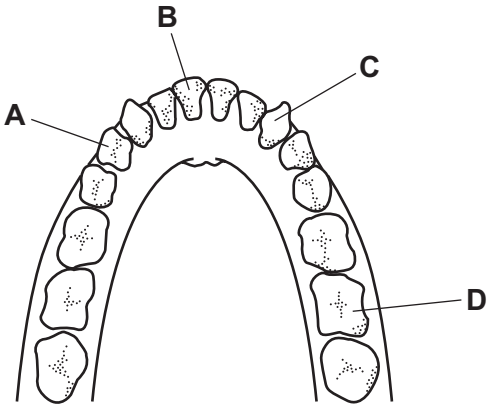
Which food provides the most energy?



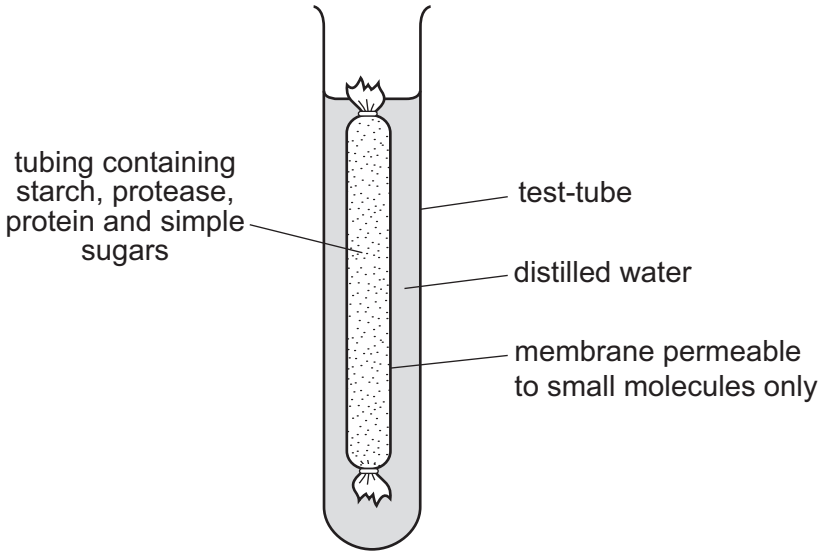
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13 The diagram shows the teeth of the lower jaw of a human.

Which tooth is a premolar?



14 The diagram shows an experiment kept at room temperature.



What is present in the water surrounding the membrane after 45 minutes?

A amino acids and simple sugars

B protein and amino acids

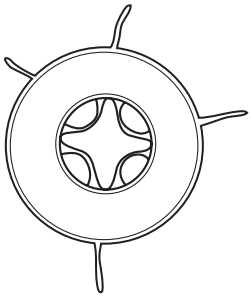
C protein and simple sugars

D starch and simple sugars

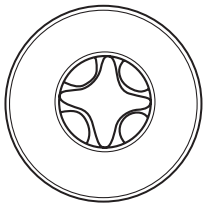
15 The diagrams show cross-sections through four roots.

Which root is best adapted for absorbing water from the soil?

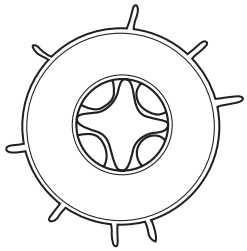
A



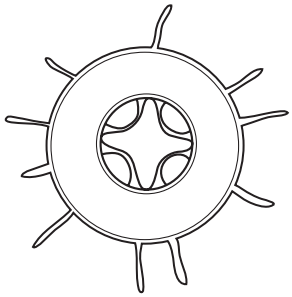
B



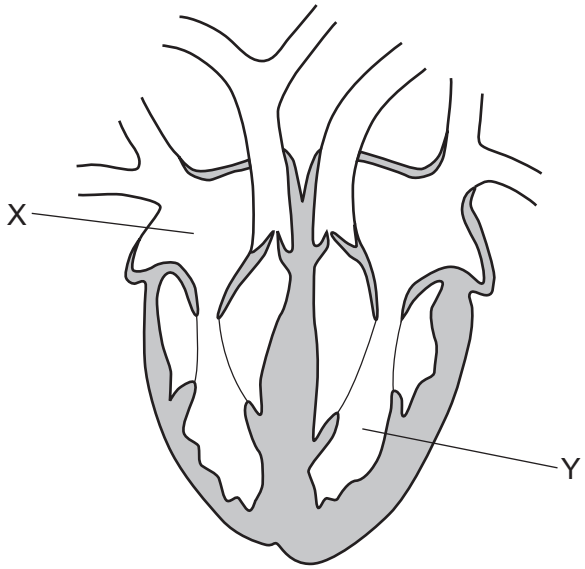
C



D



16 The diagram shows a vertical section through a human heart.

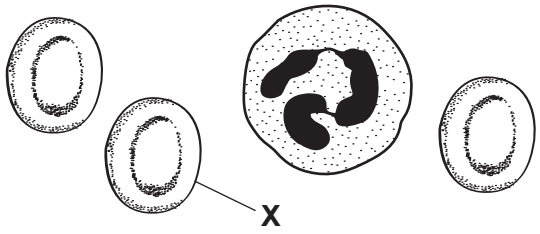


What are X and Y?

	X	Y
A	left atrium	right ventricle
B	left ventricle	right atrium
C	right atrium	left ventricle
D	right ventricle	left atrium

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17 The diagram shows human blood cells, as seen under a microscope.



What is the function of cell **X**?

A to carry glucose

B to carry oxygen

C to defend against disease

D to make the blood clot

18 A pathogen is defined as

A a contaminated surface or food.

B a disease-causing organism.

C a transmissible disease.

D a virus.

19 Which row shows the approximate percentage of gases in expired air?

	percentage of carbon dioxide	percentage of oxygen
A	12	9
B	4	16
C	24	24
D	27	20

20 Mammals maintain a constant body temperature.

What process must occur continuously to maintain a constant body temperature?

A excretion

B respiration

C shivering

D sweating

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[Turn over

21 Which process releases the most energy from one molecule of glucose?

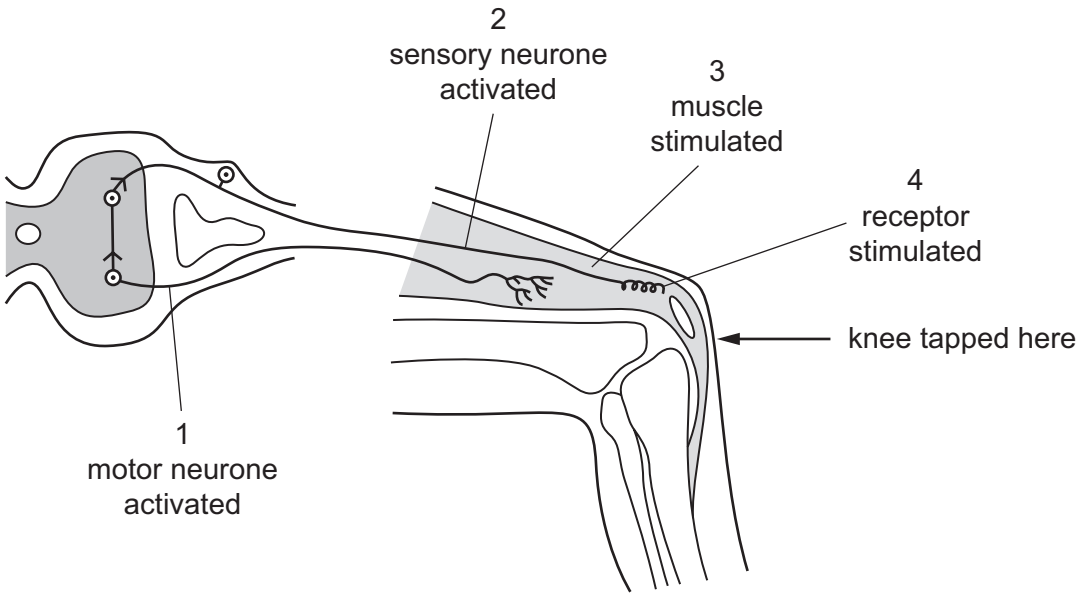
A aerobic respiration

B anaerobic respiration in muscle

C anaerobic respiration in yeast

D photosynthesis

22 The diagram shows a simple reflex arc.



What is the correct order of events after the knee is tapped?

A $1 \rightarrow 2 \rightarrow 3 \rightarrow 4$

B $1 \rightarrow 4 \rightarrow 2 \rightarrow 3$

C $4 \rightarrow 2 \rightarrow 1 \rightarrow 3$

D $4 \rightarrow 3 \rightarrow 2 \rightarrow 1$

23 Which type of cell is found in sense organs?

A ciliated

B effector

C receptor

D palisade

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24 What is meant by the term *tropism*?

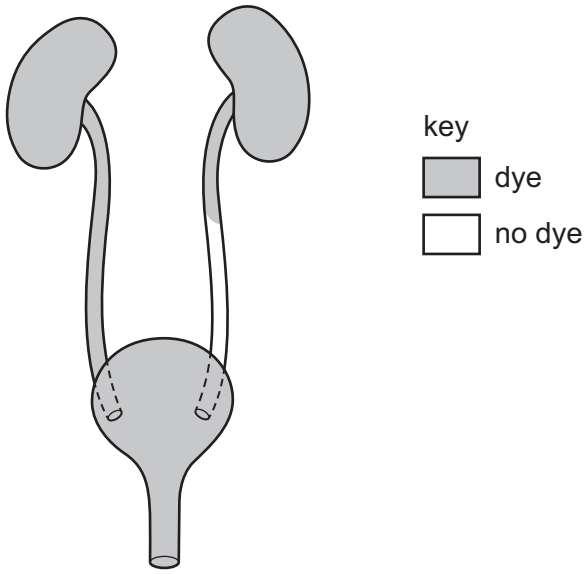
A absorption of light by chlorophyll

B growth of parts of a plant towards or away from a stimulus

C growth of seed into a small plant

D level at which an organism feeds in a food chain

25 A patient has dye injected into the blood supply to his kidneys. The dye appears in his excretory system as shown.



Which part is blocked?

A the kidney

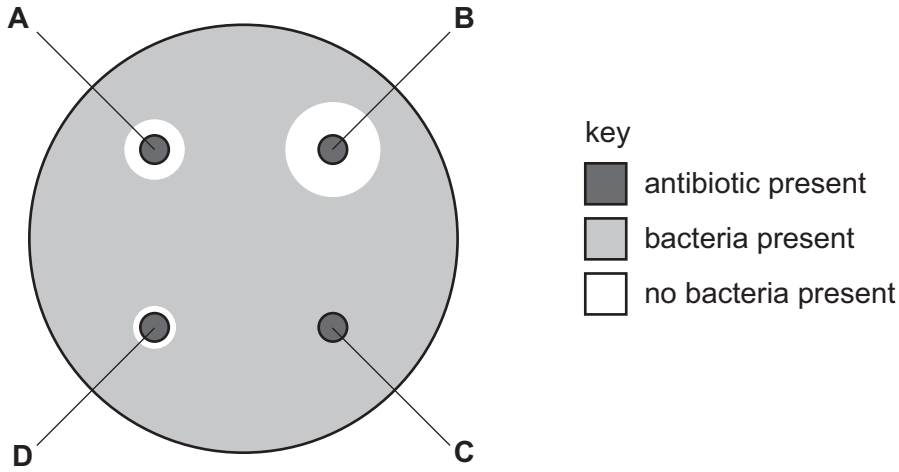
B the ureter

C the bladder

D the urethra

26 The diagram shows the effect of four different antibiotics, A, B, C and D, on the growth of bacteria.

Which antibiotic are the bacteria most resistant to?



27 Excess alcohol affects the body.

Which statement explains the risk of driving after consuming excessive alcohol?

A Alcohol can be addictive.

B Alcohol causes liver damage.

C Alcohol slows down reaction times.

D Alcohol speeds up reaction times.

28 To which part of the flower is pollen transferred in pollination?

A anther

B petal

C sepal

D stigma

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29 The table shows some of the stages that happen during labour and birth.

What is the correct order?

A	amniotic sac breaks	→	cutting umbilical cord	→	cervix fully dilated	→	afterbirth delivered	→	passage through vagina
B	amniotic sac breaks	→	cervix fully dilated	→	passage through vagina	→	cutting umbilical cord	→	afterbirth delivered
C	cervix fully dilated	→	amniotic sac breaks	→	cutting umbilical cord	→	passage through vagina	→	afterbirth delivered
D	afterbirth delivered	→	cervix fully dilated	→	cutting umbilical cord	→	amniotic sac breaks	→	passage through vagina

30 The table shows the percentage effectiveness of four methods of contraception when used correctly.

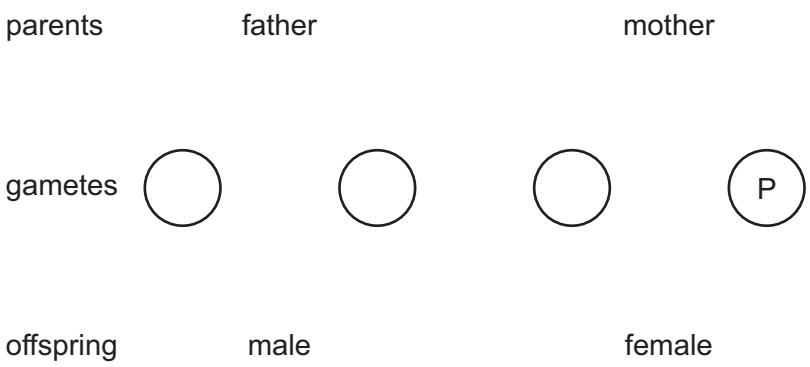
method	percentage effectiveness
male condom	98
diaphragm	94
femidom	95
vasectomy	99

What would be the expected percentage of unplanned pregnancies if the surgical method of contraception was used?

A 1% **B** 2% **C** 5% **D** 6%

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31 The diagram shows part of a genetic diagram for the inheritance of sex in humans.



What are the sex chromosomes in gamete P and the male offspring?

	P	male offspring
A	X	XX
B	X	XY
C	Y	XX
D	Y	XY

32 A mouse with grey hair breeds with a mouse with white hair, producing offspring with genotypes Bb, Bb, bb and bb. (B represents the dominant allele for grey hair, and b represents the recessive allele for white hair.)

Which correctly describes the genotypes of the parents?

A both heterozygous

B both homozygous dominant

C one heterozygous and one homozygous dominant

D one heterozygous and one homozygous recessive

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33 The following features were observed in a pair of identical twins.

feature	twin 1	twin 2
tongue rolling	yes	yes
eye colour	brown	brown
lobed ears	yes	yes
weight	60 kg	65 kg
hair length	short	long

Which features show phenotypic variation?

A eye colour and weight

B lobed ears and hair length

C tongue rolling and lobed ears

D weight and hair length

34 Which statement about selective breeding is correct?

A The inheritance of alleles is not involved.

B Only individuals better adapted to the environment will survive.

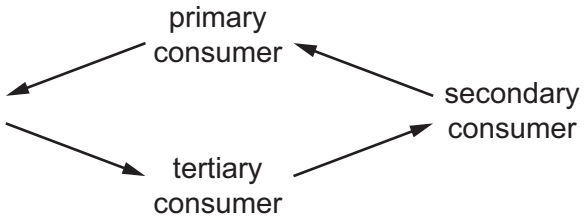
C Individuals are crossed to produce the next generation.

D There is competition for resources.

35 Which diagram shows energy passing along a food chain?

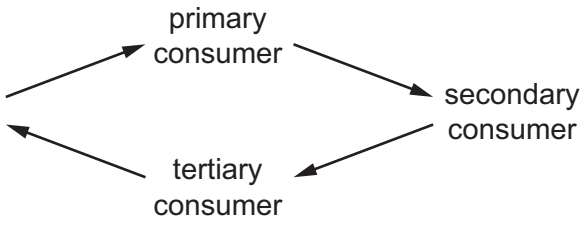
A producer → primary consumer → secondary consumer → tertiary consumer

B



C producer ← primary consumer ← secondary consumer ← tertiary consumer

D



36 Which organisms remove carbon dioxide from the atmosphere?

A consumers

B decomposers

C herbivores

D producers

37 Which feature of bacteria makes them especially useful in biotechnology?

A They are often pathogens.

B They have a unique genetic code.

C They have cell walls.

D They reproduce rapidly.

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38 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

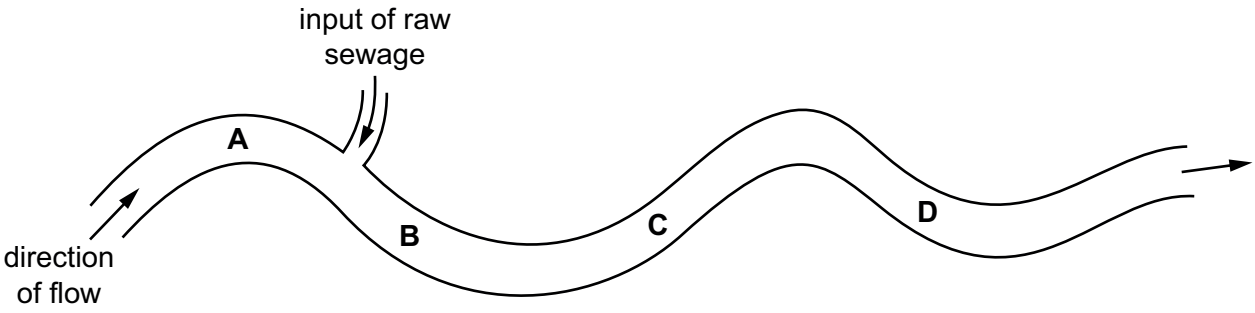
39 What are the possible effects of deforestation?

	loss of soil	flooding	decrease in atmospheric carbon dioxide
A	yes	yes	no
B	yes	no	yes
C	no	yes	no
D	no	no	yes

40 The bloodworm is an organism that is found in heavily polluted water.

The diagram shows where raw sewage flows into a river.

Where would there be fewest bloodworms?



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