Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/11**

Paper 1 Multiple Choice (Core) **May/June 2017**

45 minutes

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

* 6 3 5 4 4 0 9 3 6 2 *

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.

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

This document consists of **15** printed pages and **1** blank page.

© UCLES 2017

1 Which characteristic do **all** living organisms show?

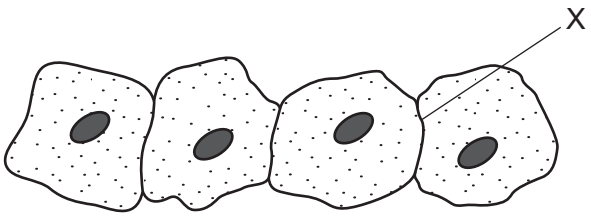
A breathing

B excretion

C photosynthesis

D tropism

2 The diagram shows some animal cells, as seen under the microscope.



What will be present at X?

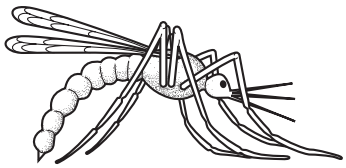
A one cell membrane

B one cell wall

C two cell membranes

D two cell walls

3 The diagram shows an animal.



What is the animal?

1 animal with a vertebral column ..... vertebrate

animal with an exoskeleton ..... go to 2

2 no distinct head, thorax and abdomen ..... **A**

distinct head, thorax and abdomen ..... go to 3

3 eye occupies less than one third of the head ..... **B**

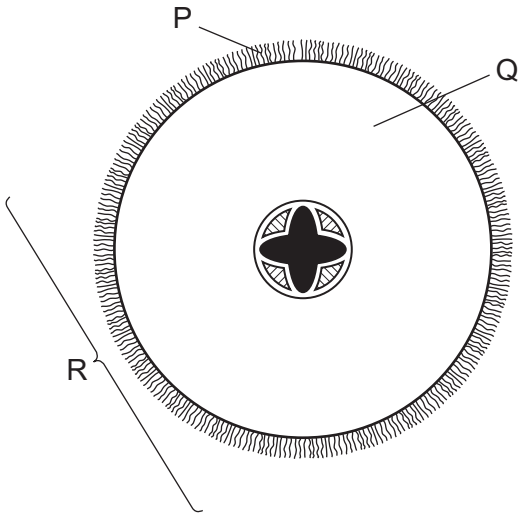
eye occupies more than one third of the head ..... go to 4

4 wings are wider than they are long ..... **C**

wings are longer than they are wide ..... **D**

© UCLES 2017

4 The diagram shows a section through a root.



What are the levels of organisation of the labelled structures?

	cell	organ	tissue
A	P	Q	R
B	P	R	Q
C	Q	R	P
D	R	Q	P

5 Which characteristics are correct for **both** osmosis and diffusion?

	require a partially permeable membrane	require a concentration gradient	are energy consuming processes
A	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✗
D	✗	✗	✓

© UCLES 2017

[Turn over

6 The table shows the results of some food tests.

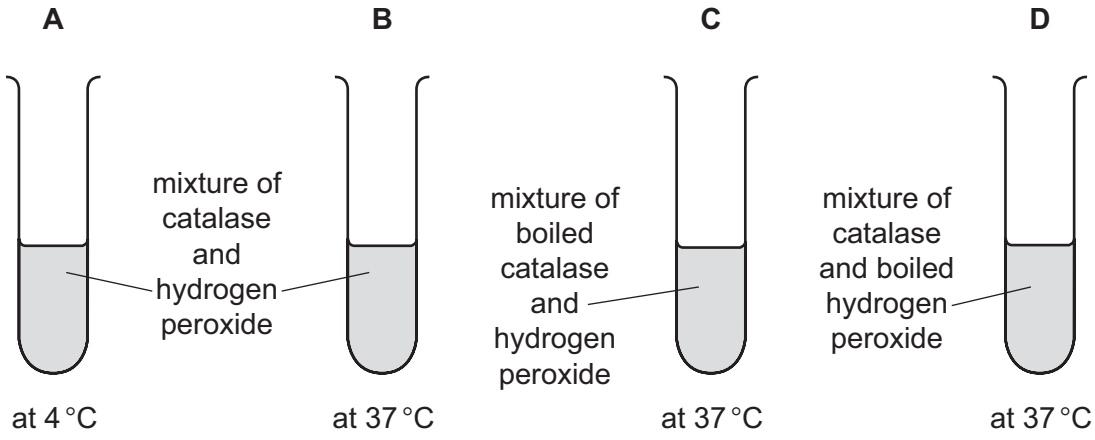
Which row shows a food containing both protein and starch?

	Benedict's solution	biuret test	ethanol	iodine solution
A	blue	blue	clear	blue-black
B	blue	purple	clear	blue-black
C	red	blue	cloudy	brown
D	red	purple	cloudy	brown

7 The diagrams show an experiment on enzyme activity.

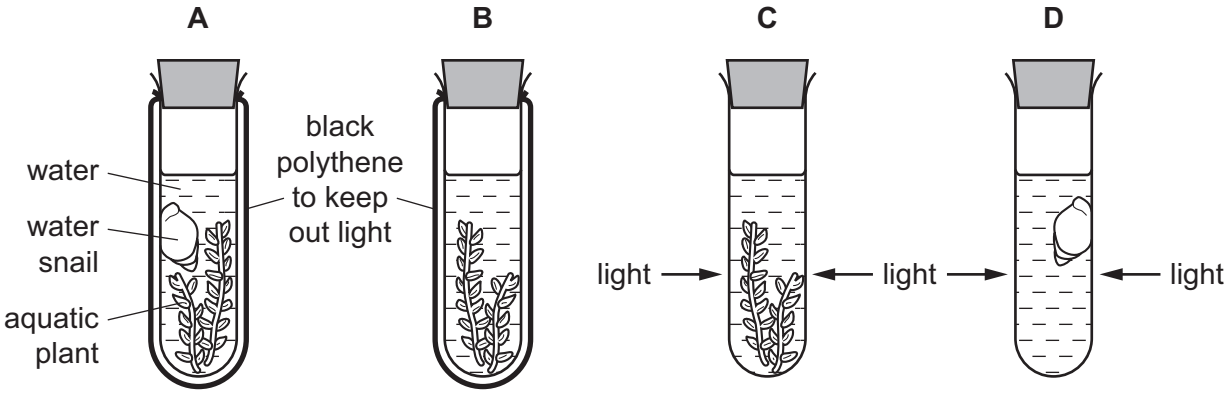
The test-tubes contain hydrogen peroxide and the enzyme catalase.

In which test-tube is the enzyme inactive?

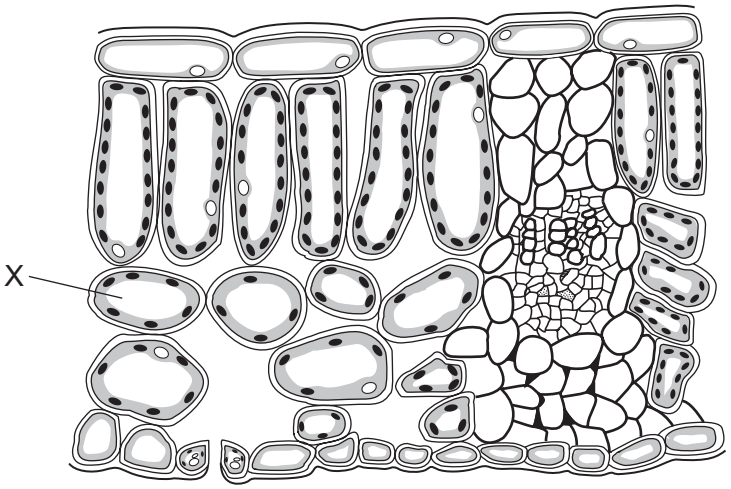


8 Four test-tubes are set up as shown.

Which test-tube contains the most carbon dioxide after one hour?



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



Which tissue is the cell labelled X part of?

A epidermis

B palisade mesophyll

C phloem

D spongy mesophyll

10 In plants, which ions are used to make amino acids?

A magnesium

B nitrates

C phosphates

D potassium

11 Which condition can be caused by a deficiency of vitamin C?

A constipation

B cholera

C obesity

D scurvy

12 In which structure does storage and assimilation occur?

A liver

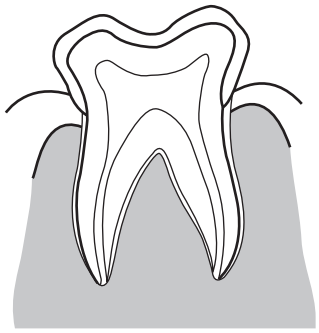
B mouth

C pancreas

D rectum

© UCLES 2017

13 The diagram shows a human tooth.



Which statement best describes the function of this tooth?

A It bites into food.

B It cuts food.

C It grinds food.

D It tears food.

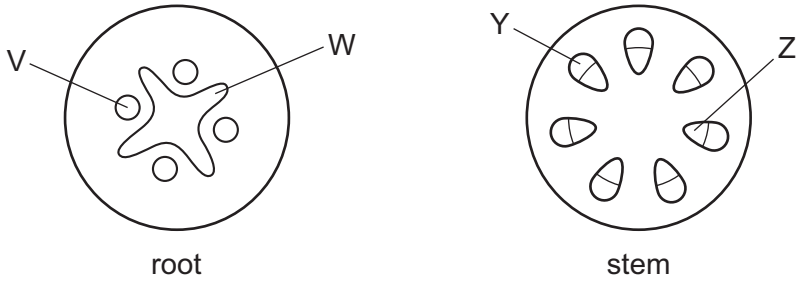
14 To protect some medicines from the effect of gastric juice some tablets are coated with a starch-like substance.

Which enzyme digests the coating and what is produced by this action?

	enzyme	products
A	amylase	fatty acids and glycerol
B	amylase	simple sugars
C	lipase	fatty acids and glycerol
D	lipase	simple sugars

© UCLES 2017

15 The diagrams show cross-sections through a root and a stem.

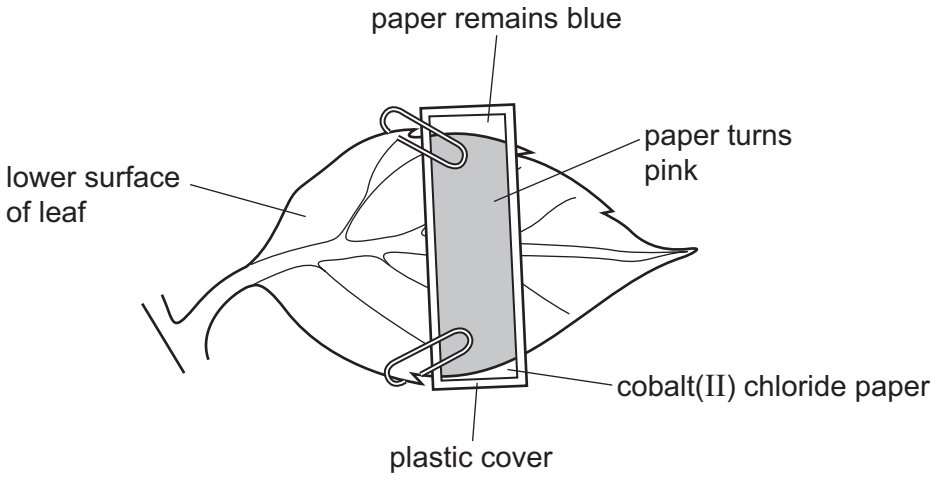


Which labels are correct?

	V	W	Y	Z
A	phloem	xylem	xylem	phloem
B	phloem	xylem	phloem	xylem
C	xylem	phloem	xylem	phloem
D	xylem	phloem	phloem	xylem

16 A piece of blue cobalt(II) chloride paper is clipped to the lower surface of a fresh leaf and is then covered with plastic, as shown.

After a few minutes, part of the paper turns pink, showing that water is present.



Which process carried out by leaves causes the paper to turn pink?

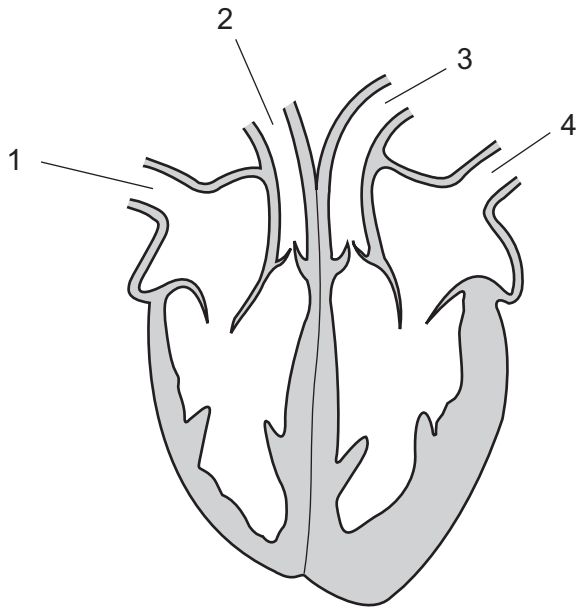
A absorption

B photosynthesis

C respiration

D transpiration

17 The diagram shows a section through the mammalian heart.



Which labelled structures are arteries?

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

18 What is an example of a transmissible disease?

A COPD

B HIV

C scurvy

D tooth decay

19 What is a disease-causing organism called?

A antibody

B host

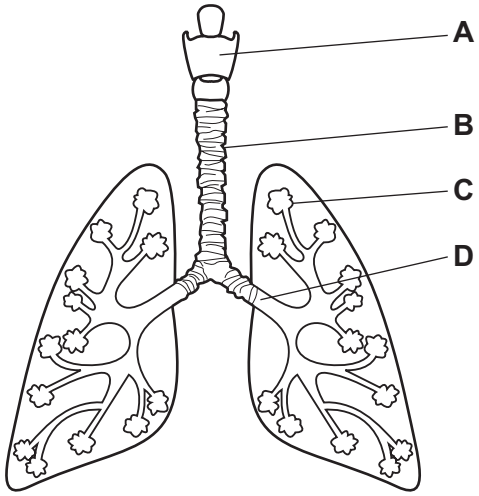
C pathogen

D phagocyte

© UCLES 2017

20 The diagram shows part of the human gas exchange system.

Where does the exchange of gases between air and blood take place?

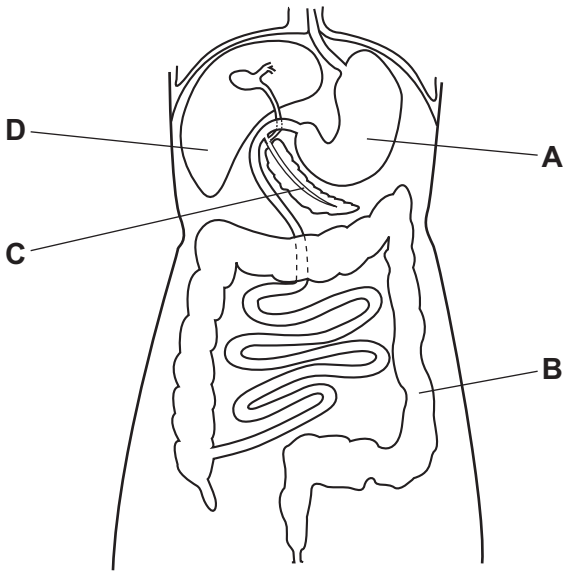


21 Which statements about aerobic respiration are correct?

	breaks down nutrients	releases energy	uses oxygen
A	✓	✓	✓
B	✓	✓	✗
C	✗	✗	✓
D	✗	✗	✗

22 The diagram shows some organs in the human body.

In which part are amino acids broken down to form urea?



23 What is a synapse?

A a junction between two neurones

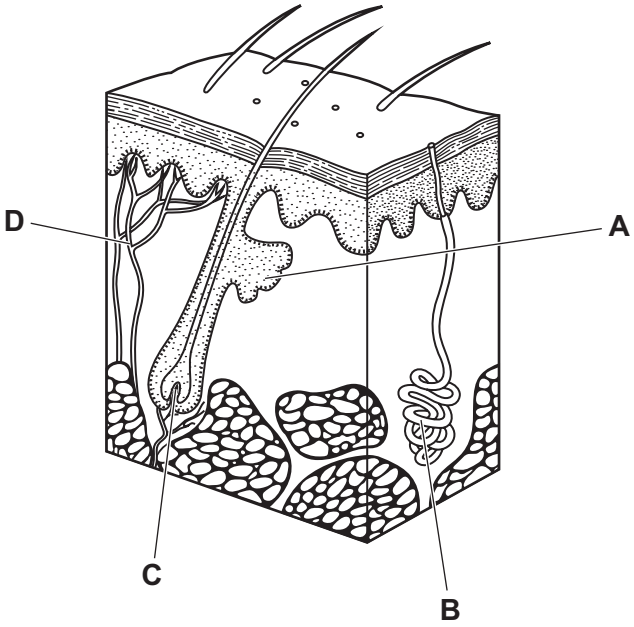
B a relay neurone

C an effector

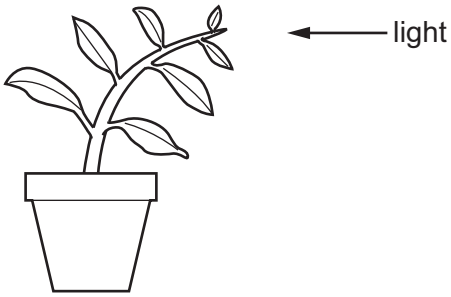
D an electrical signal

24 The diagram shows the skin.

Which labelled structure releases sweat?



25 The diagram shows a plant shoot growing towards light.



Which response is shown by the shoot of the plant?

A active transport

B gravitropism

C photosynthesis

D phototropism

© UCLES 2017

26 Which statement about microorganisms is correct?

A Bacteria are killed by hydrochloric acid in the duodenum.

B Bacteria can become resistant to antibiotics.

C Bacterial infection and viruses are treated with antibiotics.

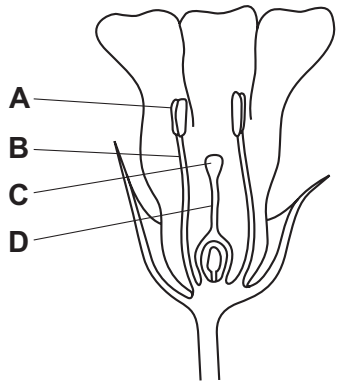
D Bacteria produce sugars that cause tooth decay.

27 Which row correctly describes the type of plant reproduction that involves pollination?

	type of plant reproduction	offspring compared with parents
A	asexual	genetically different
B	asexual	genetically identical
C	sexual	genetically different
D	sexual	genetically identical

28 The diagram shows half a flower.

Which structure is the stigma?



29 A typical menstrual cycle consists of 28 days, with day 1 being the start of menstruation.

On which day is the lining of the uterus thickest?

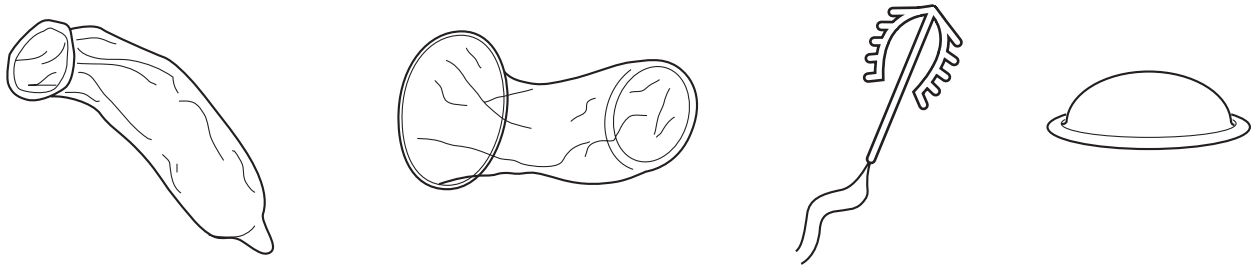
A 1 **B** 4 **C** 9 **D** 21

© UCLES 2017

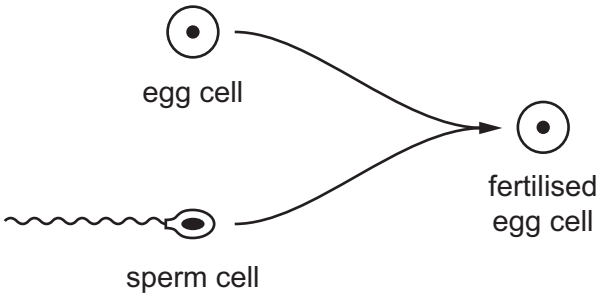
30 The diagram shows four types of birth control device.

Which is **not** a barrier method of contraception?

A **B** **C** **D**



31 The diagram shows the production of a human fertilised egg cell which develops into a male.



Which row shows the sex chromosomes in the cells?

	sex chromosomes found in		
	egg cell	sperm cell	fertilised egg cell
A	X	X	XX
B	Y	X	XY
C	X	Y	XY
D	X	Y	XX

32 Which statements about mitosis are correct?

1 Mitosis produces genetically identical cells.

2 Mitosis produces genetically different cells.

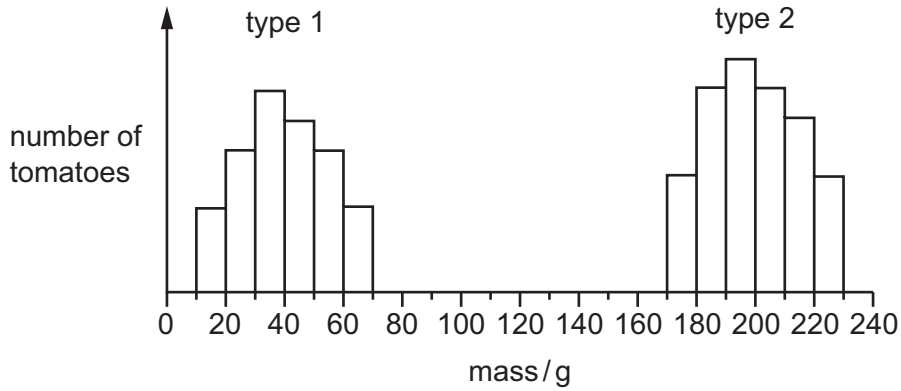
3 Mitosis produces gametes.

4 Mitosis produces body cells.

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

© UCLES 2017

33 The graph shows the masses of two different types of tomato.



What can be concluded from the graph?

A Genes do not affect the mass of tomatoes.

B Type 1 tomatoes show continuous variation.

C Type 2 tomatoes are sometimes smaller than type 1 tomatoes.

D Type 2 tomatoes show discontinuous variation.

34 Which of these is a population?

1 all the insects in a rainforest

2 all the tigers in a rainforest

3 all the kapok trees in a rainforest

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

35 The diagram shows a food chain in a rock pool.

seaweed → whelks → crabs → seagulls

What will happen if the number of secondary consumers increases?

There will be

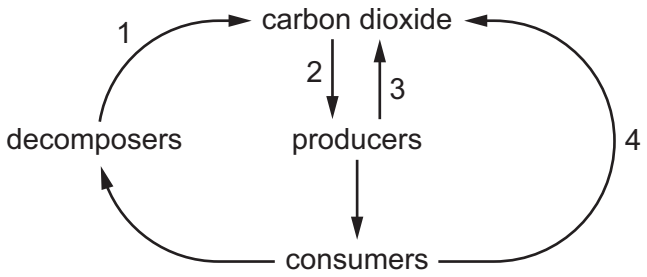
A fewer crabs.

B fewer seagulls.

C fewer whelks.

D less seaweed.

36 The diagram shows part of the carbon cycle.

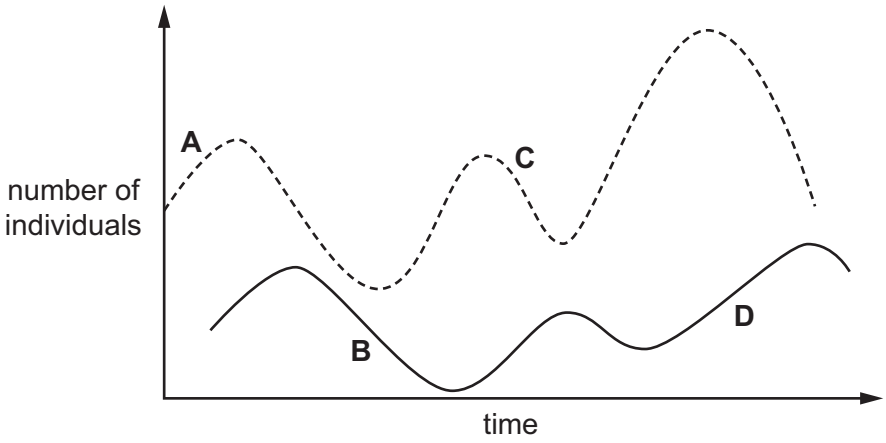


In which labelled stages is respiration occurring?

	1	2	3	4
A	✓	✓	✓	✗
B	✓	✗	✓	✓
C	✗	✓	✓	✓
D	✗	✗	✗	✓

37 The graph shows the changes in the populations of predator and prey over a period of time.

Which point on the graph shows a decrease in predator population?



38 Which is a reason for using bacteria in biotechnology?

A Bacteria are found inside the human body.

B Bacteria can become resistant to antibiotics.

C Bacteria can make complex molecules.

D Bacteria reproduce slowly.

© UCLES 2017

39 Why is yeast used in breadmaking?

A to produce alcohol

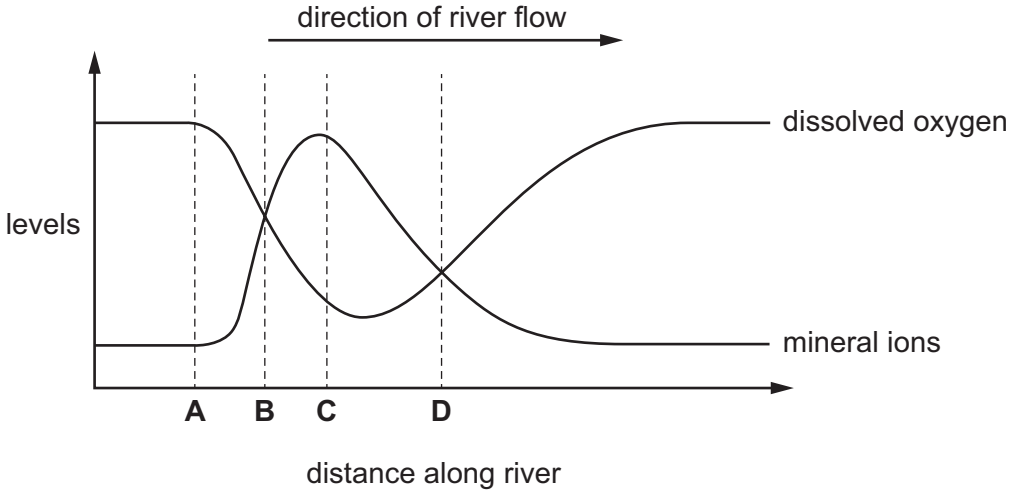
B to produce carbon dioxide

C to use up oxygen

D to use up sugar

40 The graph shows the levels of dissolved oxygen and mineral ions in a river.

At which point does raw sewage enter the river?



BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.