Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/11**

Paper 1 Multiple Choice (Core) **October/November 2017**

45 minutes

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

* 0 8 4 6 4 7 6 9 3 5 *

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.

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1 Which process in plant cells uses chlorophyll?

A growth

B nutrition

C movement

D respiration

2 The table shows the scientific names of four members of the cat family.

common name	scientific name
leopard	*Panthera pardus*
lion	*Panthera leo*
ocelot	*Leopardus pardalis*
tiger	*Panthera tigris*

Which statement is correct?

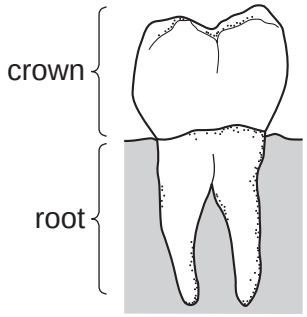
A All four cats are members of the same species.

B The leopard and the ocelot are members of the same genus.

C The leopard, lion and tiger are members of the same genus.

D The leopard, lion and tiger are members of the same species.

3 The diagram shows a type of tooth.



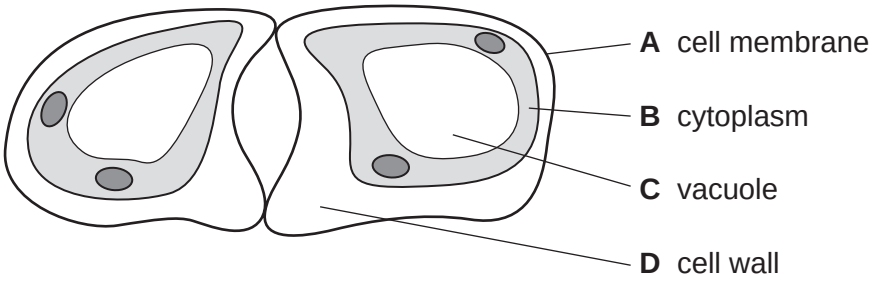
Use the key to identify the tooth.

1	the root is divided into two parts	go to 2
	the root is not divided into two parts	go to 3
2	the height of the crown is greater than the length of the root	**A**
	the height of the crown is less than the length of the root	**B**
3	flattened crown	**C**
	ridged crown	**D**

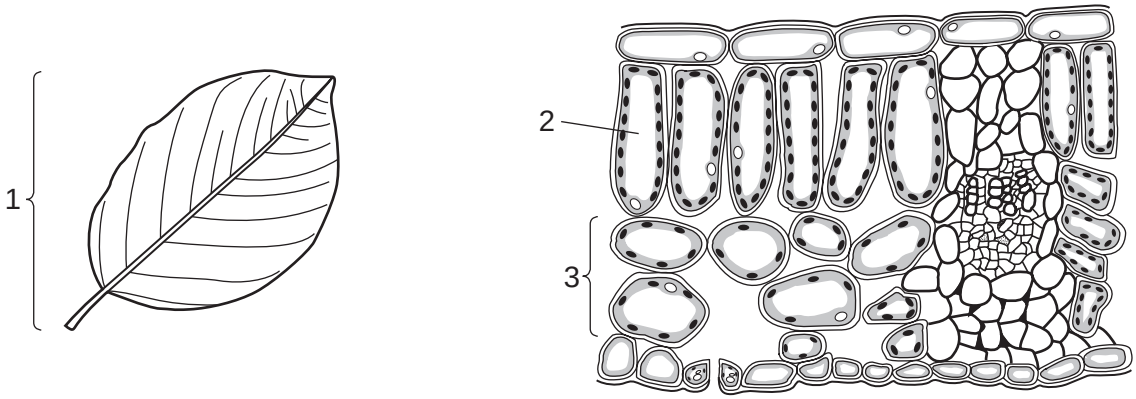
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4 The diagram shows a student's drawing of guard cells.

Which label is **not** correct?



5 The diagrams show a leaf and its internal structure.

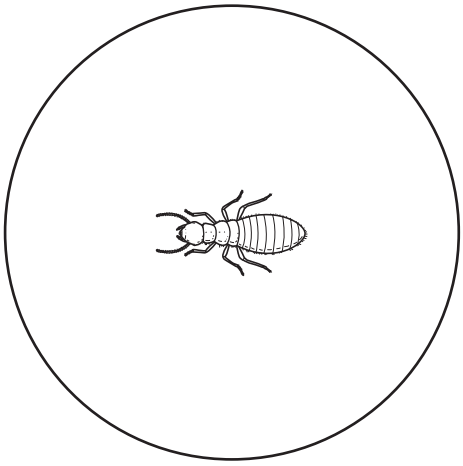


What are the levels of organisation of the labelled structures?

	1	2	3
A	cell	tissue	organ system
B	organ	cell	tissue
C	organ system	tissue	cell
D	tissue	cell	organ

6 The diagram shows an insect as seen using the low power lens of a microscope.

The actual diameter of the circle is 0.3 cm.

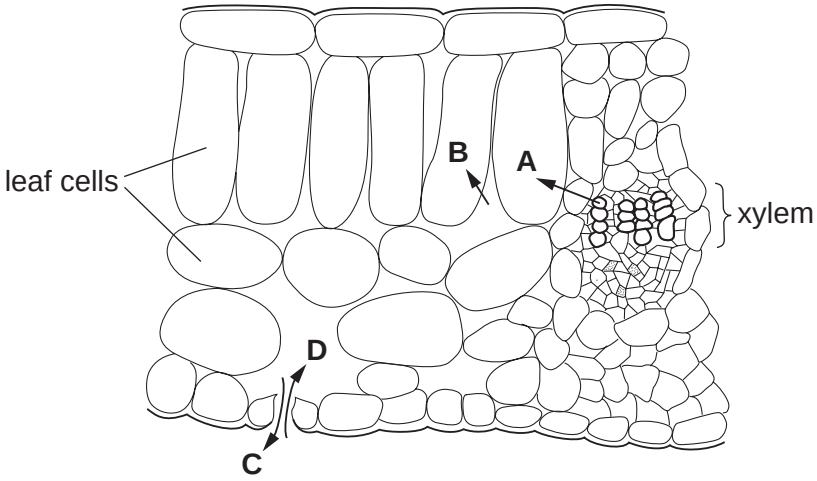


What is the approximate size of this insect in millimetres?

A 0.1 mm **B** 1.0 mm **C** 2.0 mm **D** 3.0 mm

7 The diagram shows part of a section through a leaf.

Which arrow represents the diffusion of oxygen during photosynthesis?



8 What helps to support plants?

A pressure inwards on the cell vacuoles

B pressure inwards on the chloroplasts

C pressure outwards on the cell walls

D pressure outwards on the nuclei

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9 Which of these is digested by protease?

A ■

B ●

C ■—■—■—■

D ●—●—●—●

key

■ amino acid

● glucose

— chemical bond

10 Which enzyme is used to produce clear apple juice?

A amylase

B lipase

C pectinase

D protease

11 What is the optimum pH for stomach enzymes?

A pH 2 **B** pH 7 **C** pH 9 **D** pH 12

12 What are the raw materials necessary for photosynthesis?

A carbon dioxide and water

B light and a suitable temperature

C oxygen and carbon dioxide

D water and a suitable temperature

13 In plants, which substance contains magnesium ions?

A cellulose

B chlorophyll

C haemoglobin

D starch

14 What must be increased in the diet of a person suffering from constipation?

A fats

B fibre

C iron

D protein

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[Turn over

15 Which chemical reaction takes place in the mouth?

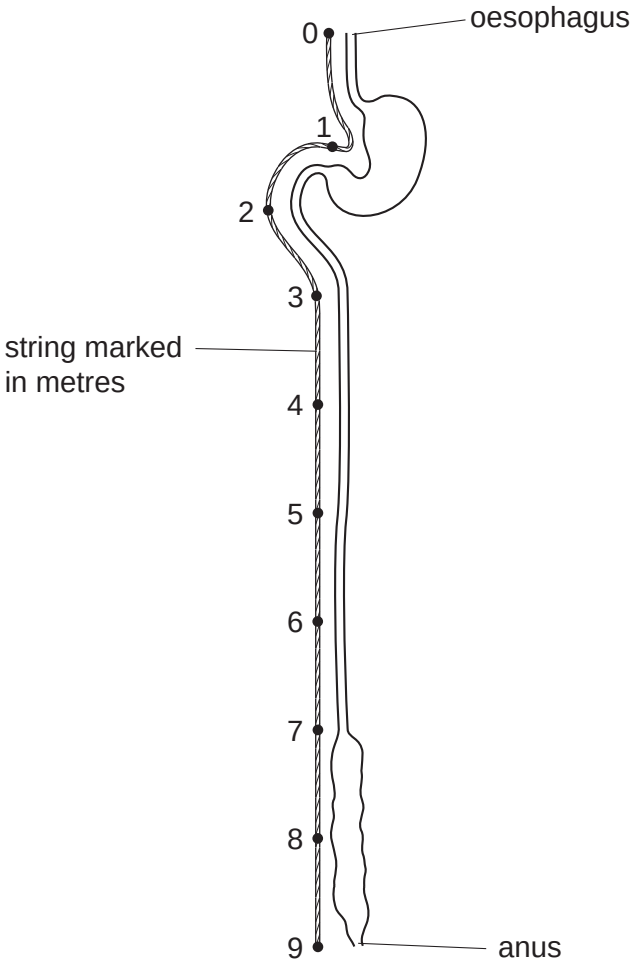
A Fats are digested into fatty acids and glycerol.

B Fats are digested into simpler sugars.

C Starch is digested into simpler sugars.

D Starch is digested into amino acids.

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 What is a description of transpiration?

A exchange of gases between the leaf and the atmosphere

B loss of water vapour from the leaves and stems of a plant

C movement of water from the roots to the leaves

D movement of water through the cells of the leaf

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18 Which tissue transports water from the roots to the leaves in a plant?

A cortex

B epidermis

C mesophyll

D xylem

19 On which organ is an ECG performed?

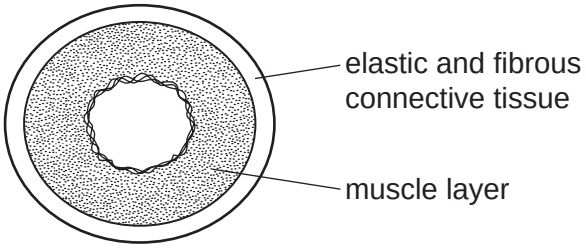
A brain

B colon

C ear

D heart

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

21 Which are both chemical barriers to the transmission of pathogens?

A mucus and stomach acid

B mucus and white blood cells

C skin and hairs in the nose

D skin and stomach acid

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22 The table shows the approximate composition of inspired and expired air.

gas	percentage of gas in inspired air	percentage of gas in expired air
P	78.10	78.10
Q	20.90	16.00
R	variable	variable
S	0.04	4.00

What is the name of gas S?

A carbon dioxide

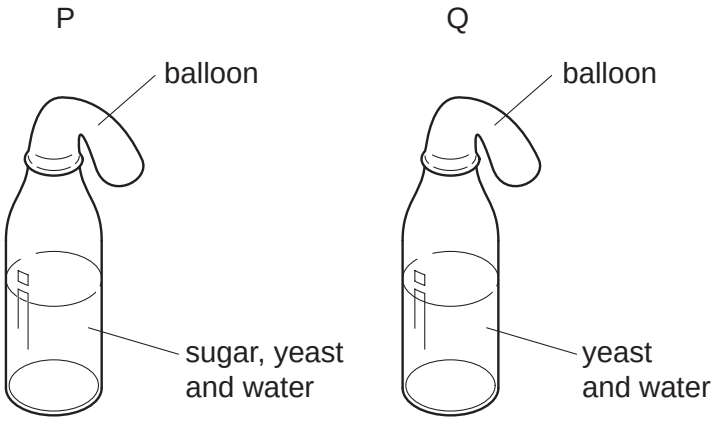
B nitrogen

C oxygen

D water vapour

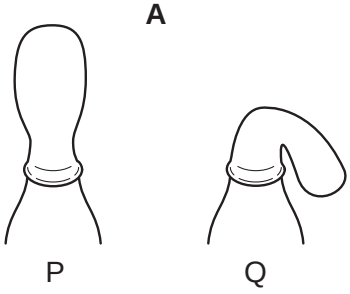
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23 In an experiment to investigate anaerobic respiration, two bottles are set up in a warm room, as shown.

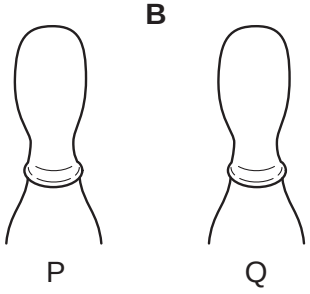


What would happen to each balloon after one day?

A



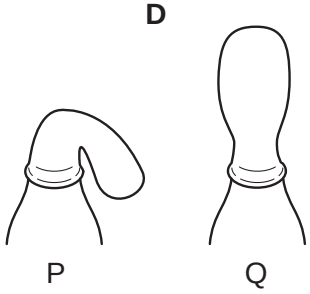
B



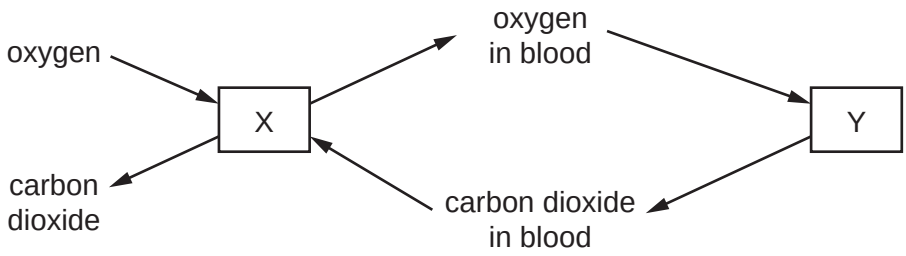
C



D



24 The diagram represents the exchange of gases during breathing and during respiration in the body.



What is represented by X and by Y?

	X	Y
A	lungs	air
B	lungs	body cells
C	body cells	air
D	body cells	lungs

25 The table shows information about urea.

Which row is correct?

	substance that urea is made from	organ that makes urea	organ that excretes urea
A	amino acids	kidney	bladder
B	amino acids	liver	kidney
C	fatty acids	kidney	bladder
D	fatty acids	liver	kidney

26 What is the most important function of sweating?

A to remove excess heat from the body

B to remove excess salts from the body

C to remove excess urea from the body

D to remove excess water from the body

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27 What shows the order in which these structures are involved in a reflex action?

A effector → motor neurone → relay neurone → sensory neurone → receptor

B effector → sensory neurone → motor neurone → relay neurone→ receptor

C receptor → sensory neurone → relay neurone → motor neurone → effector

D receptor → motor neurone → sensory neurone → relay neurone→ effector

28 The diagram shows a person sweating in hot weather.



What part is played by sweat glands during the process of sweating?

A effector

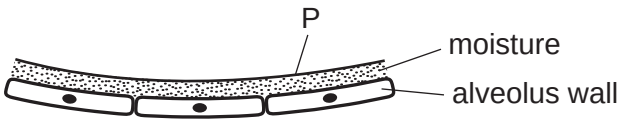
B receptor

C sense organ

D stimulus

29 The diagram shows the gas exchange surface of a person who has just smoked a cigarette.

Substance P can cause cancer.



What is substance P?

A carbon dioxide

B carbon monoxide

C nicotine

D tar

30 Which method of birth control works by preventing an egg from being released?

A condom

B contraceptive pill

C monitoring body temperature

D vasectomy

31 Which environmental factor is **not** always a requirement for seed germination?

A light

B oxygen

C suitable temperature

D water

32 Four processes involved in labour and birth are shown.

1 cutting the umbilical cord

2 contraction of muscles in the uterus wall

3 dilation of the cervix

4 passage of the baby through the vagina

In which sequence do these events normally occur?

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

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

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

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

33 In some mammals the allele for brown coat colour is dominant to the allele for white coat colour.

Which percentage of offspring will be white if a cross is made between two heterozygous mammals?

A 0% **B** 25% **C** 50% **D** 100%

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34 Which term is defined as a length of DNA that codes for a protein?

A amino acid

B chromosome

C gene

D mutation

35 What makes tongue rolling an example of discontinuous variation?

A A person can roll their tongue only when they are young.

B There are many different types of tongue rollers.

C Tongue rolling has to be learnt.

D Tongue rolling is something that a person either can or cannot do.

36 What is shown by the widest block in a pyramid of numbers for a grassland ecosystem?

A all the consumers in the pyramid

B the carnivores in the pyramid

C the organisms at the top of the pyramid

D the producers in the pyramid

37 A food chain is shown.

potato plant → slug → hedgehog

By which process is energy transferred from the potato plant to the slug?

A egestion

B excretion

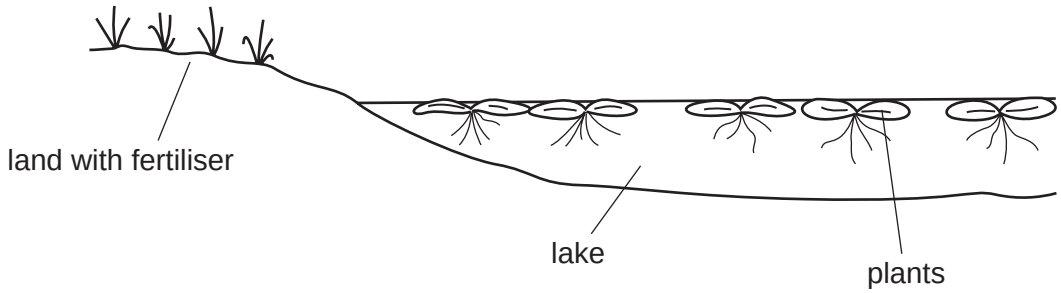
C ingestion

D photosynthesis

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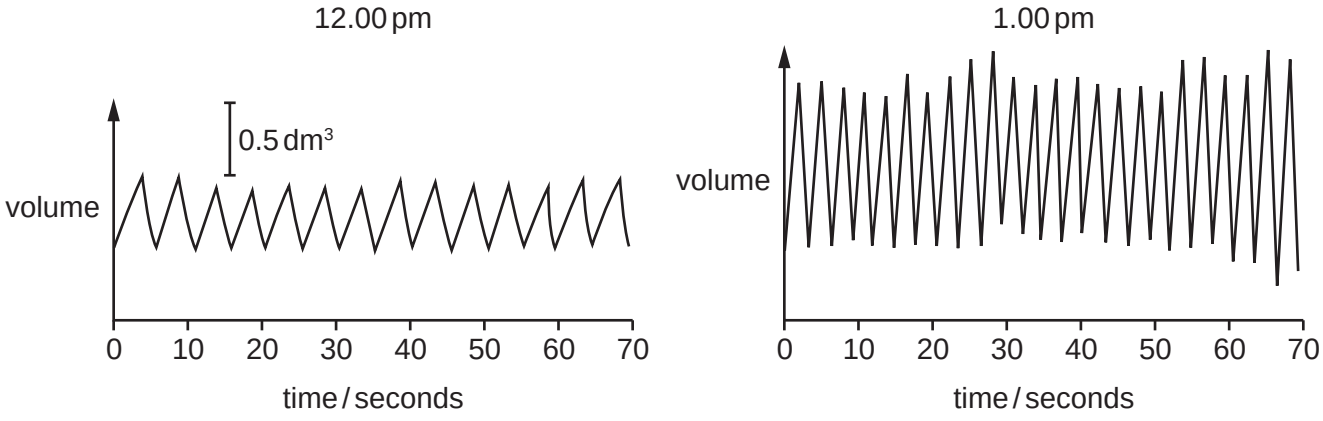
38 A farmer put some fertiliser on his field. Some of the fertiliser drained into a nearby lake.



What is the effect of the fertiliser on the growth of the crop plants in the field and the plants in the lake?

	crop plant growth	lake plant growth
A	decreased	decreased
B	decreased	increased
C	increased	decreased
D	increased	increased

39 The diagrams show the depth and rate of breathing in a person at 12.00 pm and 1.00 pm.



What happens to the person's breathing between 12.00 pm and 1.00 pm?

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

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40 The table shows the amount of carbon dioxide in the atmosphere in three different years.

year	1930	1980	1990
carbon dioxide / parts per million	300	330	370

What is the most likely cause of this change?

A destruction of rainforests

B increased use of fertilisers containing nitrogen

C pollution of air by sulfur dioxide

D rise in the sea level

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