Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/13**

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)

7127785257

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 **16** printed pages.

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1 Which process releases water and energy?

A aerobic respiration

B osmosis

C photosynthesis

D protein synthesis

2 The dire wolf is an extinct species of wolf.

What is the correct scientific name for this wolf?

A *Canis Dirus*

B *canis dirus*

C *Canis dirus*

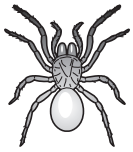
D *canis Dirus*

3 Which of the animals shown is a crustacean?

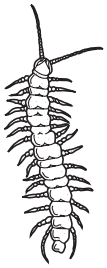
A



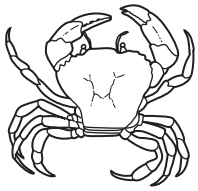
B



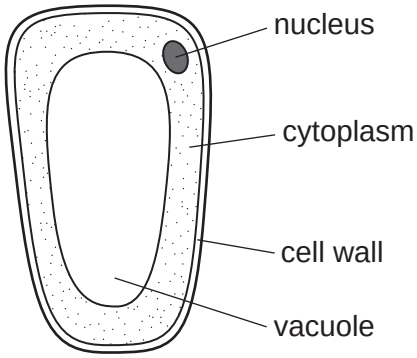
C



D



4 The diagram shows a type of plant cell.



Where does this type of cell come from?

A a root

B cuticle

C palisade mesophyll

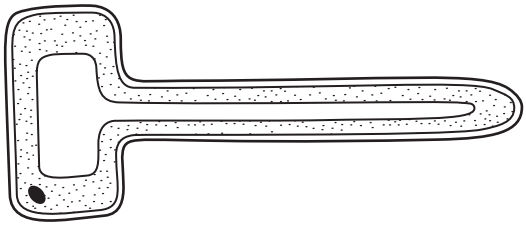
D spongy mesophyll

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5 Which structures are found in a white blood cell?

	cell membrane	cell wall	chloroplast	large vacuole	cytoplasm	nucleus
A	✓	✓	✗	✗	✗	✗
B	✓	✗	✗	✗	✓	✓
C	✗	✓	✗	✗	✗	✓
D	✗	✗	✓	✓	✗	✗

6 The diagram shows the structure of a plant cell.



This cell is part of a tissue which

A absorbs carbon dioxide from the air.

B absorbs ions from the soil.

C transports sucrose from leaves.

D transports water in stems.

7 A student made the following statements about the movement of ions by active transport.

1 It is the net movement of particles from a low concentration to a high concentration.

2 It is the net movement of particles from a high concentration to a low concentration.

3 It requires the use of energy.

4 It can only take place in living, respiring cells.

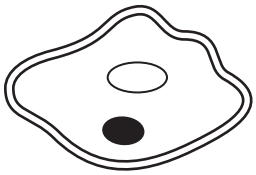
Which statements are correct?

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

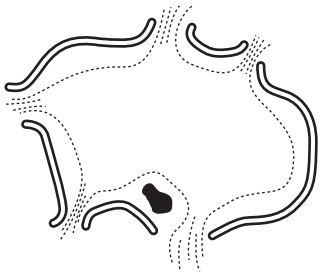
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8 Which diagram shows the appearance of a plant cell after it is placed in pure water?

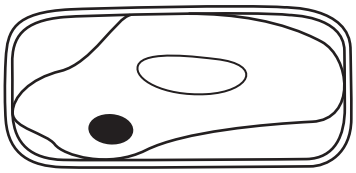
A



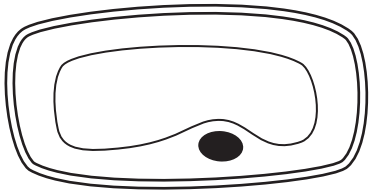
B



C



D



9 What is the colour change shown by Benedict's solution when heated with a reducing sugar?

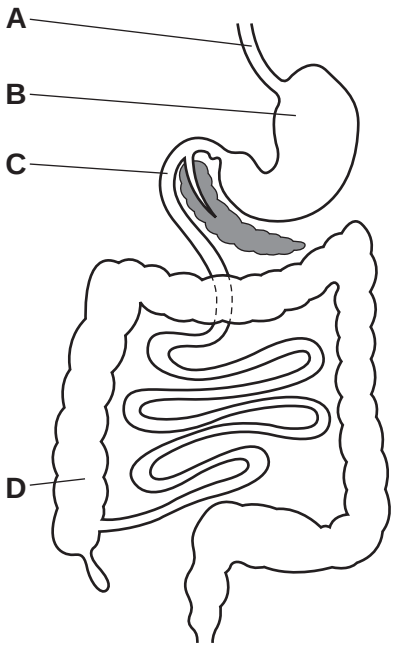
A blue to purple

B blue to red

C brown to blue-black

D red to yellow

10 Into which part of the alimentary canal is the enzyme that digests starch secreted?



11 Which of these is digested by protease?

A ■

B ●

C ■—■—■—■

D ●—●—●—●

key

■ amino acid

● glucose

— chemical bond

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

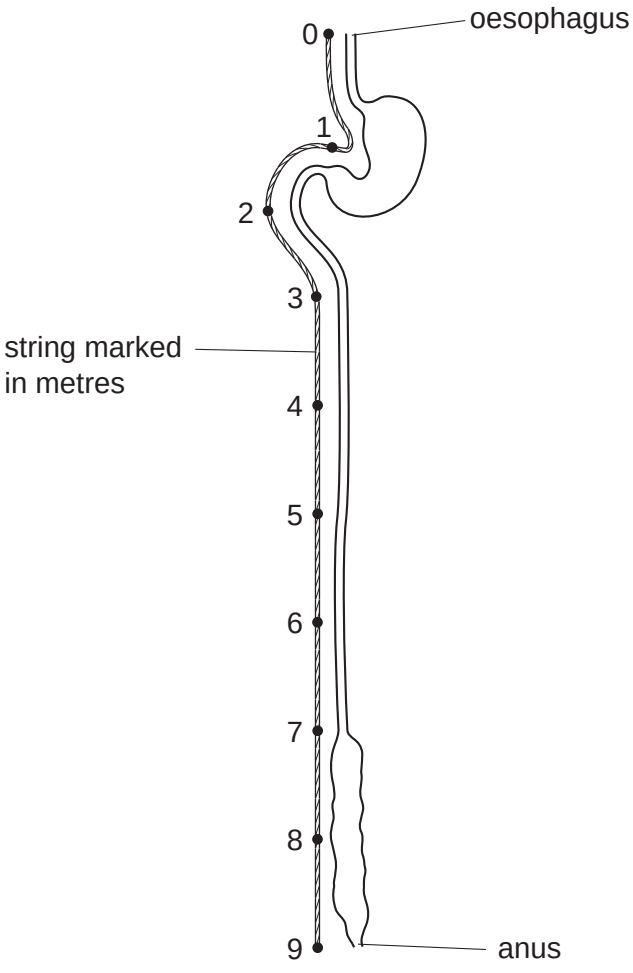
A fats

B fibre

C iron

D protein

13 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

14 A person has swollen, bleeding gums and slow wound healing.

This could be caused by a lack of which nutrient in a diet?

A calcium

B fibre

C iron

D vitamin C

15 Which function is performed by the duodenum?

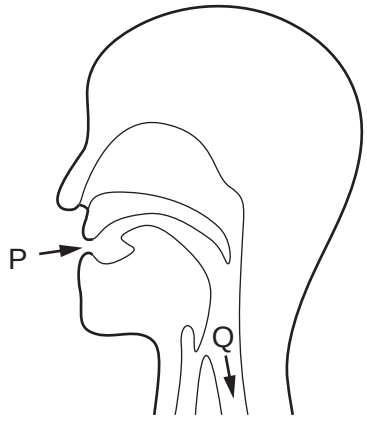
A assimilation

B digestion

C egestion

D ingestion

16 Solid food enters the mouth at P and enters the oesophagus at Q.



How does the food at Q differ from the food at P?

A It contains less fibre.

B It contains less vitamin D.

C It contains less protein.

D It contains less starch.

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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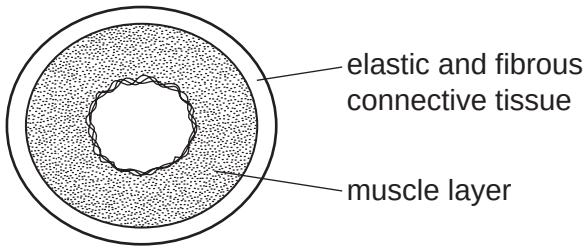
18 Which words correctly complete the following two sentences?

During transpiration, water moves from the .....1..... in a leaf and passes into .....2..... cells.

It then leaves the surface of these cells by .....3..... and .....4..... out of the stomata.

	1	2	3	4
A	phloem	xylem	osmosis	evaporates
B	stomata	guard	active transport	flows
C	xylem	mesophyll	diffusion	drains
D	xylem	mesophyll	evaporation	diffuses

19 The diagram shows a cross-section through a human blood vessel.



Which type of blood vessel does the diagram show?

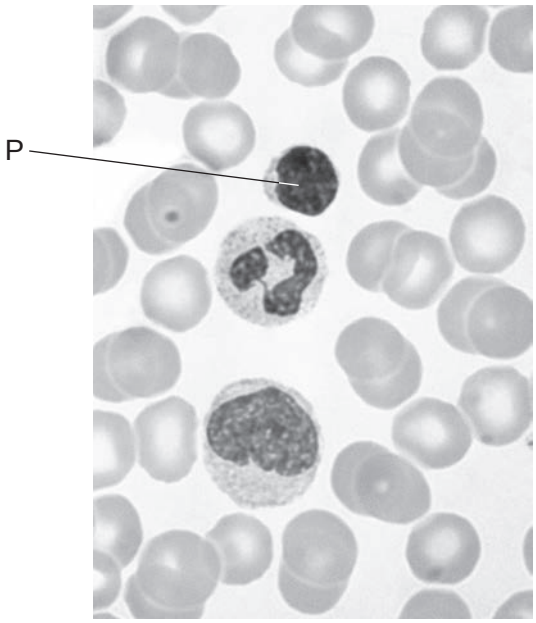
A an artery

B a capillary

C a vein

D a ventricle

20 The photomicrograph shows some blood cells.



What is the function of cell P?

A It carries carbon dioxide.

B It carries oxygen.

C It helps to clot blood.

D It produces antibodies.

21 What can be passed from one person to another during blood transfusion?

A cholera

B chronic obstructive pulmonary disease (COPD)

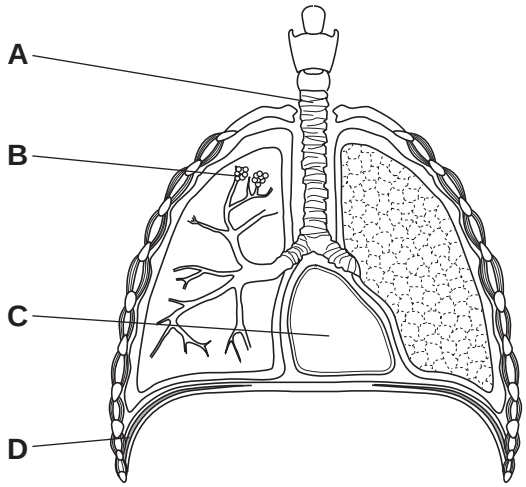
C HIV

D scurvy

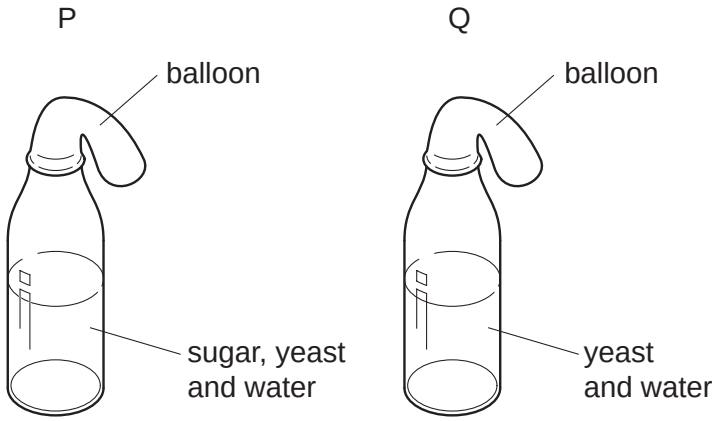
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22 The diagram shows some structures in the human thorax (chest).

From which part does most oxygen pass directly into the blood?

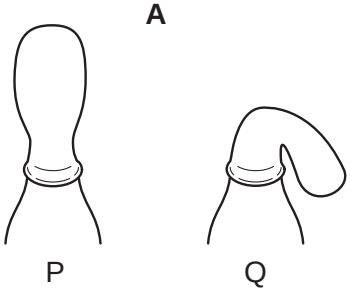


23 In an experiment to investigate anaerobic respiration, two bottles are set up in a warm room, as shown.

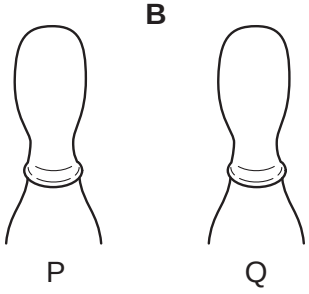


What would happen to each balloon after one day?

A



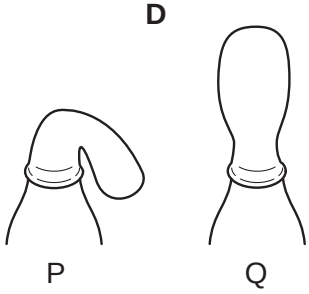
B



C

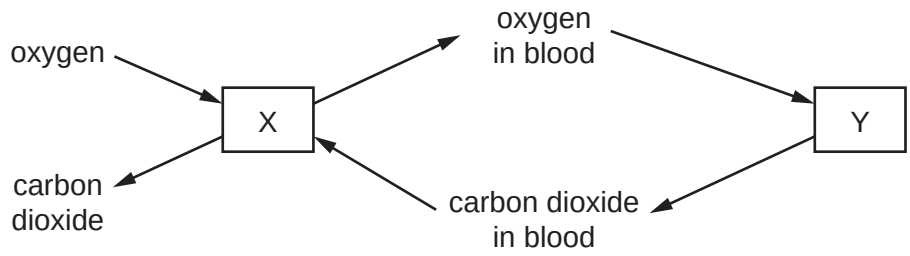


D



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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 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

26 A student begins to lose control of her bicycle while travelling down a hill at speed.

The concentration of which substance will begin to increase rapidly in her blood?

A adrenaline

B insulin

C oestrogen

D testosterone

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

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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 Which row states the possible harmful effects of tobacco smoke?

	cancer	liver damage	coronary heart disease
A	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✗
D	✗	✗	✓

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

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

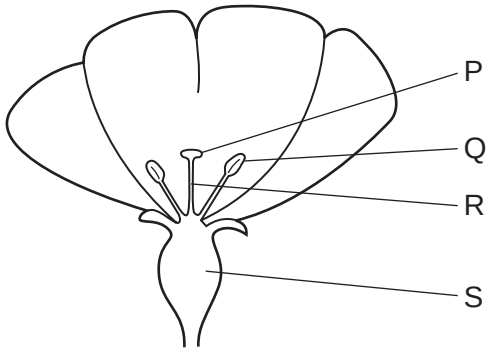
A light

B oxygen

C suitable temperature

D water

32 The diagram shows half a flower.



After pollination, where would pollen grains be found?

A P and Q **B** Q and R **C** R and S **D** S and P

33 A pure-breeding white rat was crossed with a pure-breeding black rat. All their offspring were black.

One of the offspring was bred with a pure-breeding white rat.

What is the most likely percentage of black rats in the offspring?

A 25 **B** 50 **C** 75 **D** 100

34 A tall pea plant is crossed with a short pea plant.

All the offspring plants are tall.

What are the genotypes of the tall parent plant and the offspring?

	tall parent	offspring
A	heterozygous	heterozygous
B	heterozygous	homozygous
C	homozygous	heterozygous
D	homozygous	homozygous

35 What is a mutation?

A a change in appearance

B a change in a gene

C a change in behaviour

D a change in the environment

36 Which two processes both result in increased water vapour in the atmosphere?

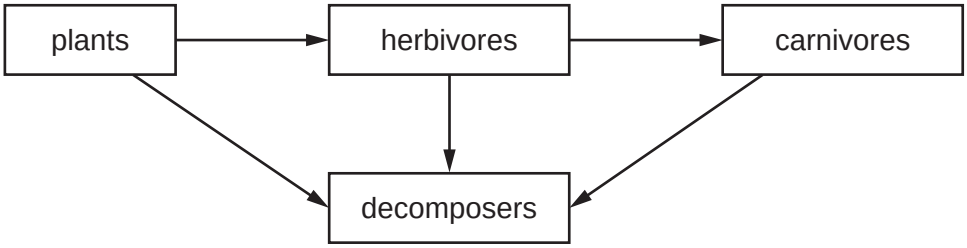
A condensation and precipitation

B condensation and transpiration

C evaporation and transpiration

D precipitation and evaporation

37 The diagram shows a food web.



What do the arrows represent?

A the absorption of oxygen

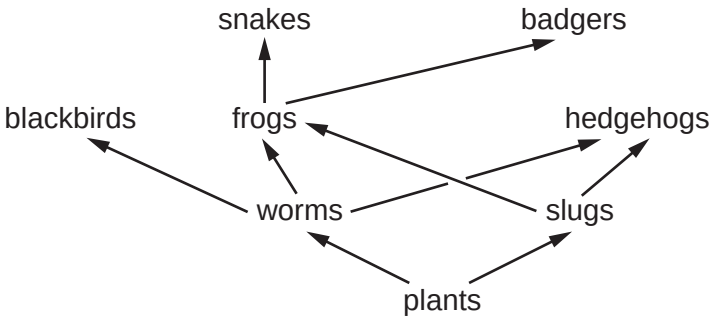
B the absorption of water

C the flow of energy

D the release of carbon dioxide

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38 The diagram shows part of a food web.



What is most likely to increase the size of the frog population?

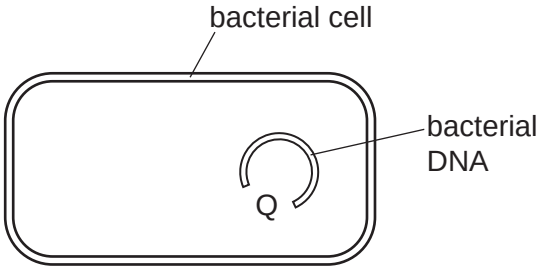
A fewer hedgehogs

B fewer slugs

C more badgers

D more blackbirds

39 The diagram shows a bacterial cell that will be used to produce human insulin.



What is inserted into gap Q?

A a gene from a healthy human

B cells from a human pancreas

C DNA from another bacterium

D molecules of human insulin

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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