Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/11**

Paper 1 Multiple Choice (Core) **May/June 2019**

45 minutes

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

1109116087

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.

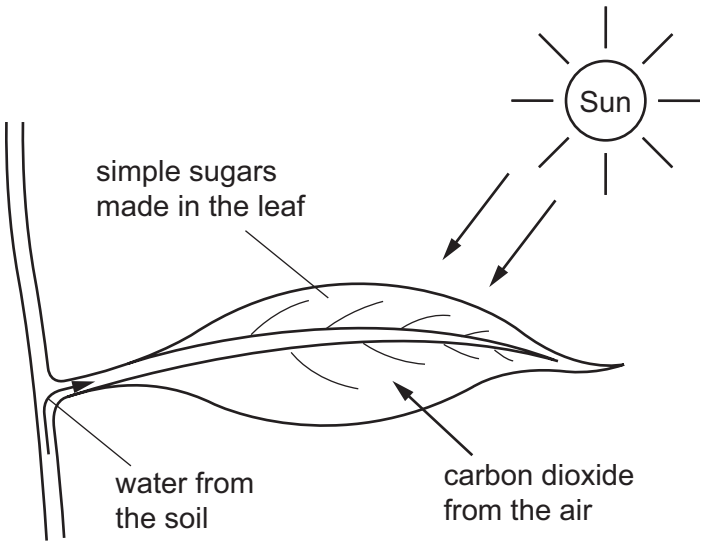
Each correct answer will score one mark. A mark will not be deducted for a wrong answer.
Any rough working should be done in this booklet.
Electronic calculators may be used.

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 **16** printed pages.

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1 The diagram shows a leaf on a plant.



Which characteristic of life is represented by this diagram?

A excretion

B nutrition

C respiration

D sensitivity

2 The diagram shows how *Homo sapiens* (modern people) could have evolved from earlier ancestors.

Homo sapiens (modern people)
↑
Homo heidelbergensis
↑
Homo erectus
↑
Homo habilis

Which statement about modern people and their ancestors is correct?

A They are in the same species and the same genus.

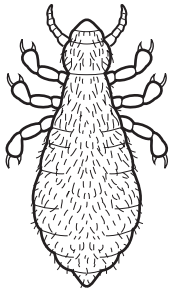
B They are in the same species but not the same genus.

C They are in the same genus but not the same species.

D They are neither the same species nor the same genus.

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3 The diagram shows an insect.



What is the insect?

1 insect has no wings ..... go to 2

insect has wings ..... go to 3

2 legs longer than, or as long as the body ..... **A**

legs shorter than the body ..... **B**

3 abdomen long and thin ..... **C**

abdomen shorter and wider ..... **D**

4 Which features are possessed by **all** plant cells?

	a cell wall	chloroplasts
A	✓	✓
B	✓	✗
C	✗	✓
D	✗	✗

key

✓ = present

✗ = absent

5 Which organ is part of the digestive system?

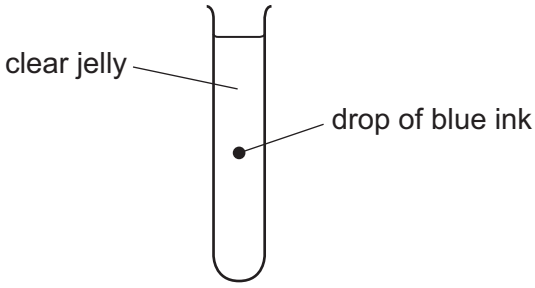
A colon

B larynx

C trachea

D ureter

6 The diagram shows a test-tube containing clear jelly. A drop of blue ink is injected into the middle of the jelly.



The blue colour of the ink spreads throughout the jelly.

By which process does the blue ink spread through the jelly?

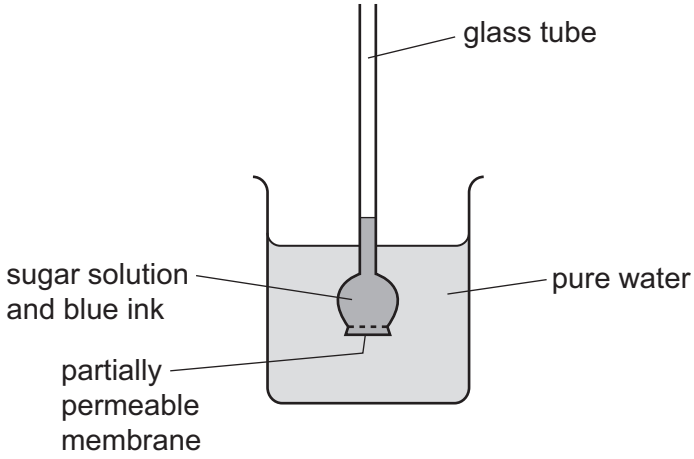
A active transport

B catalysis

C diffusion

D osmosis

7 The apparatus shown was set up.



Some hours later, the water in the beaker had turned blue, and the liquid in the glass tube had moved upwards.

Which processes caused these changes?

	water turned blue	liquid in glass tube moved upwards
A	osmosis	diffusion
B	active transport	osmosis
C	diffusion	active transport
D	diffusion	osmosis

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8 Four solutions were tested to see whether they contained protein, starch or glucose.

The colours of the solutions after the tests are recorded in the table.

Which solution contained protein and glucose but **not** starch?

	biuret test	iodine test	Benedict's test
A	blue	brown	orange
B	blue	blue-black	blue
C	purple	brown	orange
D	purple	blue-black	blue

9 Small molecules are used as the basic units in the synthesis of large food molecules.

Which statement is correct?

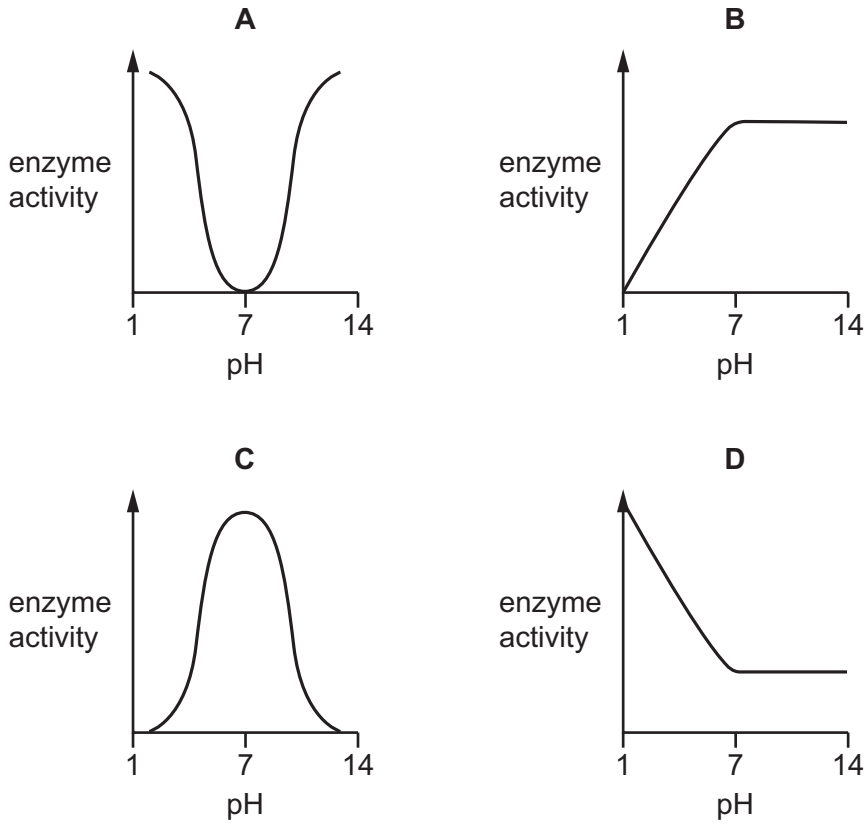
A Amino acids are basic units of carbohydrates.

B Fatty acids are basic units of glycogen.

C Glycerol is a basic unit of oils.

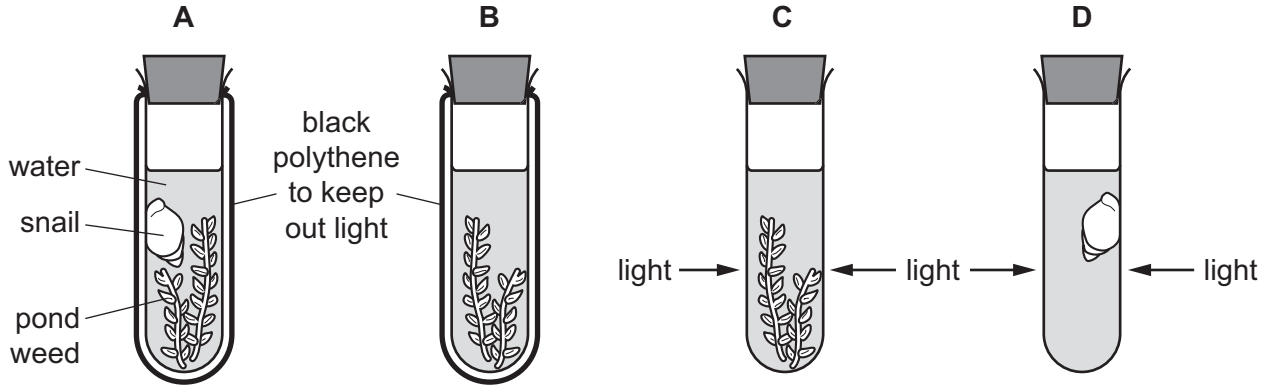
D Simple sugar is a basic unit of protein.

10 Which graph shows the effect of pH on enzyme activity?



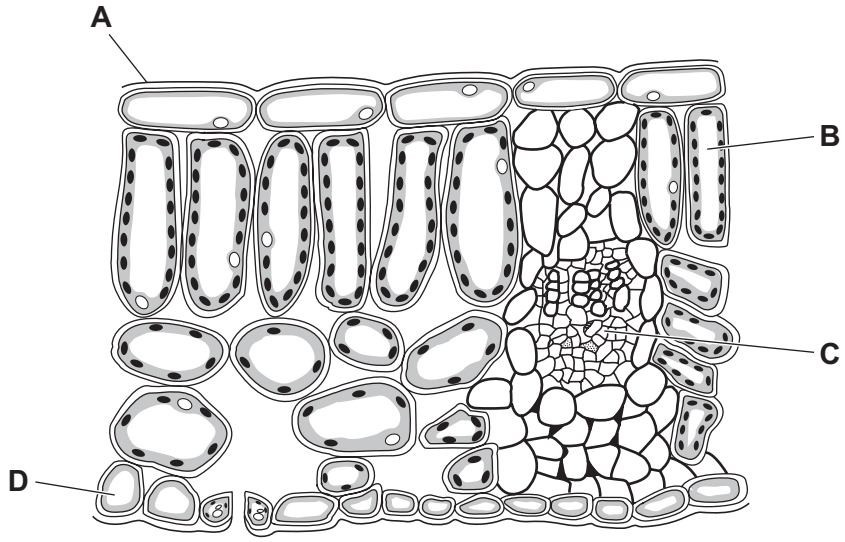
11 The diagram shows an experiment to investigate the balance between respiration and photosynthesis.

In which tube are photosynthesis and respiration taking place at the same time?

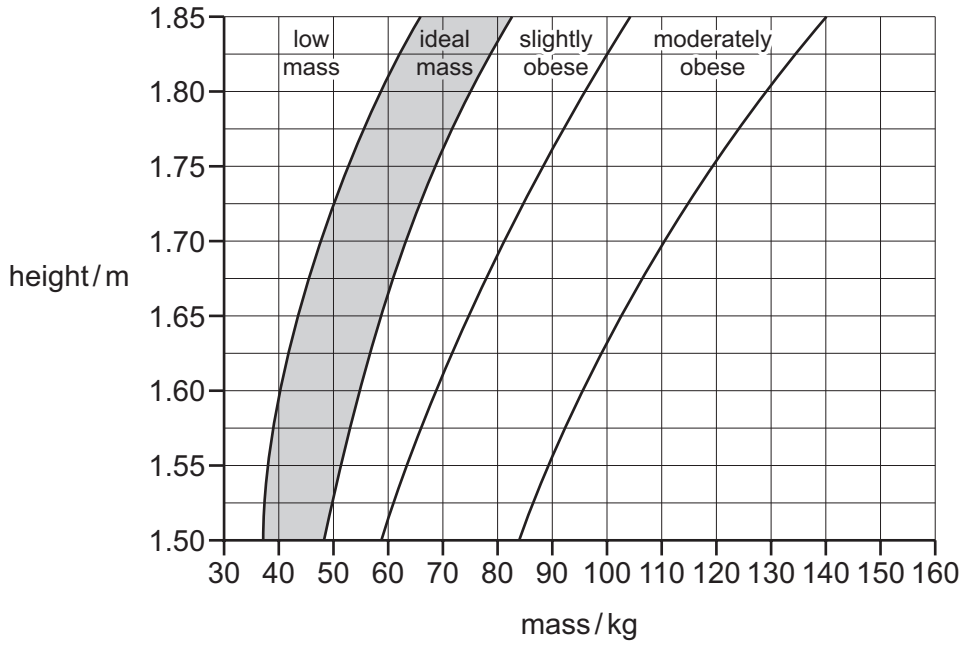


12 The diagram shows a cross-section of a leaf as seen under a microscope.

Which structure is a palisade mesophyll cell?



13 The chart is used to find a person's recommended mass.



For the data provided about body mass and height, which person would benefit most from the introduction of a calorie-controlled diet and regular exercise?

	body mass / kg	height / m
A	40	1.55
B	50	1.75
C	70	1.80
D	90	1.75

14 The following statements are about enzymes.

1 enzymes are catalysts

2 enzyme are proteins

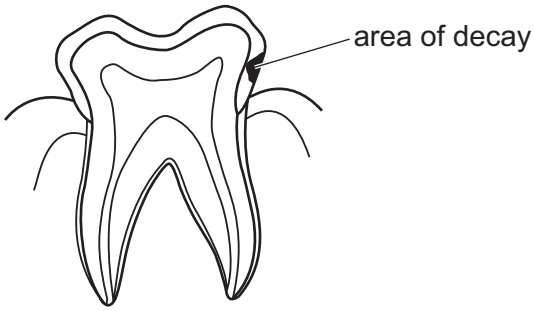
3 enzymes are used up during chemical reactions

Which statements are correct?

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

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15 The diagram shows a human tooth with an area of decay.



What is likely to have caused the decay?

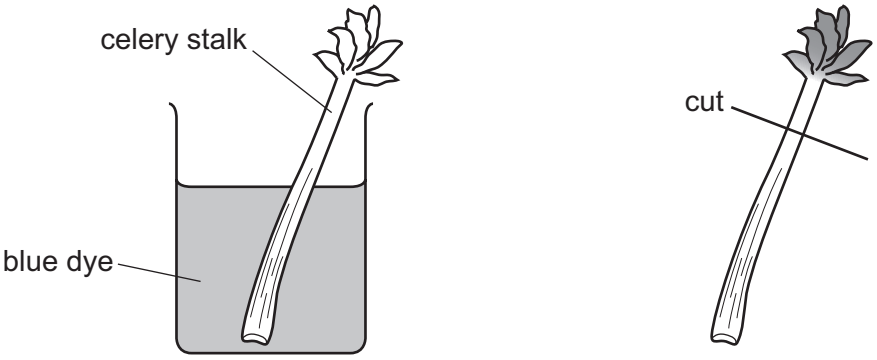
A acids released by bacteria

B digestion of the tooth by bacteria

C excess of fat in the food

D lack of fibre in the food

16 A celery stalk was placed into a beaker of blue dye. When the dye reached the leaves, the stalk was taken out and a section was cut, as shown in the diagram.

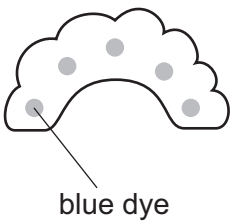


Which diagram shows the appearance of the cut end of the stalk?

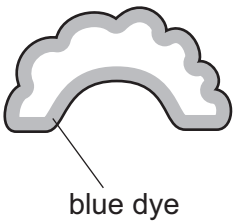
A



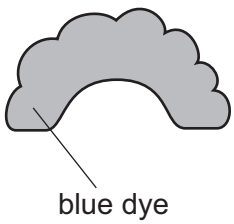
B



C



D



17 The table shows the rate of water flow through a tree over a 12 hour period.

time of day	rate of flow / cm per hour
7:00	100
9:00	120
11:00	140
13:00	250
15:00	300
17:00	260
19:00	180

What conclusion can be drawn from the table?

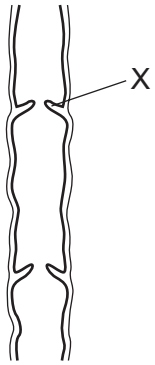
A Between 7:00 and 17:00 hours the rate of flow continuously increases.

B The greatest increase in rate of flow in a two-hour period is between 11:00 and 13:00 hours.

C Water does not flow up through a tree at night.

D Water flow is affected by humidity.

18 The diagram shows a section of a human vein.



What is the function of the part labelled X?

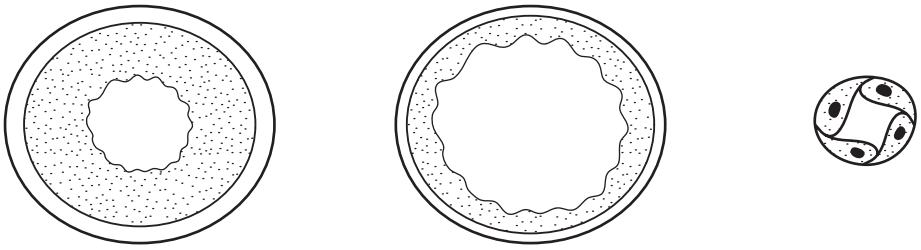
A to make sure the blood flows to the heart

B to make sure the blood flows to the kidneys

C to make sure the blood flows to the brain

D to make sure the blood flows to the lungs

19 The diagram shows cross-sections through three types of blood vessel, **not** drawn to the same scale.

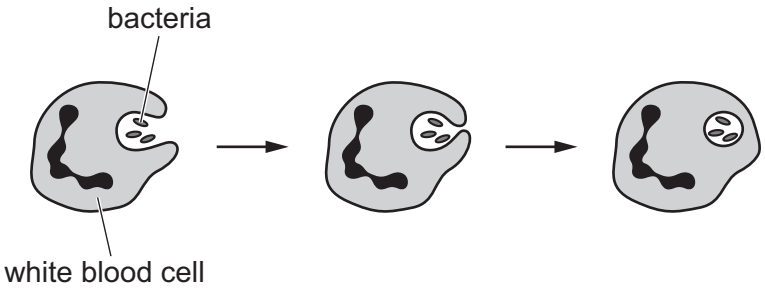


V W X

Which section is from a vein and which is from a capillary?

	vein	capillary
A	V	W
B	W	V
C	W	X
D	X	W

20 The diagram shows one way the body defends itself against pathogens.



What is the name of this defence mechanism?

A antibody production

B egestion

C phagocytosis

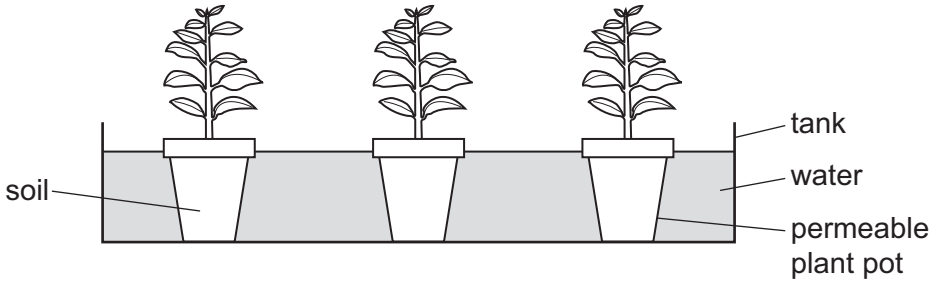
D vaccination

21 What is the approximate percentage of oxygen in expired air?

A 0.04% **B** 4% **C** 16% **D** 21%

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22 Potted plants are left for a week in a tank of water as shown.



Why do the plants die?

A The roots do not have enough oxygen.

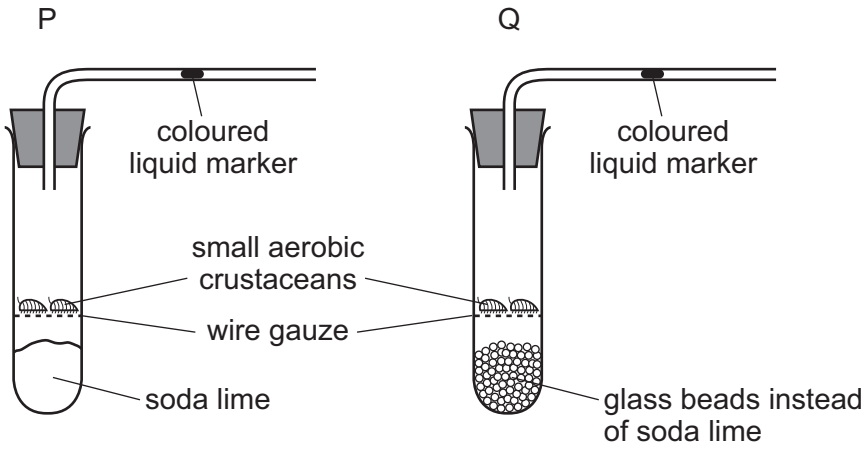
B The roots do not have enough water.

C The roots have too much oxygen.

D The roots have too much carbon dioxide.

23 The diagram shows two experiments investigating gas exchange in small aerobic crustaceans.

Soda lime absorbs carbon dioxide.



Which way does the liquid marker move?

	P	Q
A	left	right
B	left	stays still
C	right	left
D	right	stays still

24 Yeast is placed inside a container full of a glucose solution with no air.

Which word equation summarises the process that takes place inside the container?

A glucose → ethanol + carbon dioxide

B glucose → lactic acid

C glucose + oxygen → carbon dioxide + water

D glucose + oxygen → ethanol

25 Which substances are excreted by humans?

	carbon dioxide	urea	urine
A	✓	✓	✓
B	✓	✗	✓
C	✓	✓	✗
D	✗	✓	✓

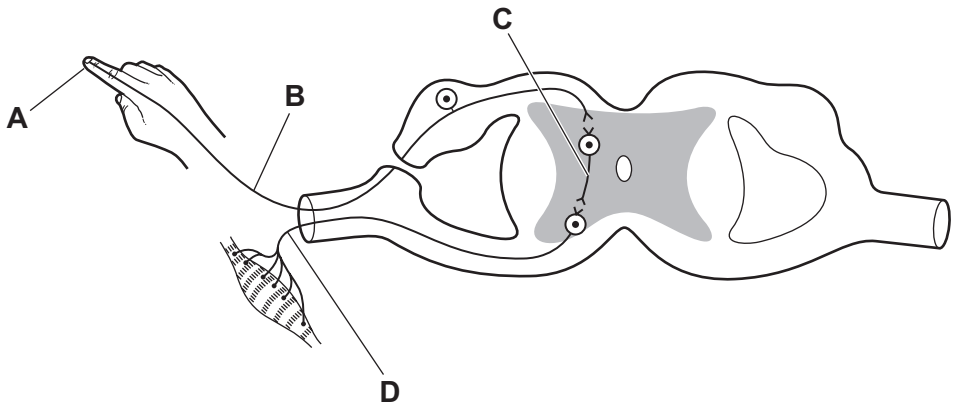
key

✓ = involved

✗ = not involved

26 The diagram shows a simple reflex arc.

Which labelled part is the sensory neurone?



27 Some structures in the eye are listed.

1 cornea

2 iris

3 lens

4 retina

Which structures contain light receptors?

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

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28 Which type of drug is used to treat bacterial infection?

A antibody

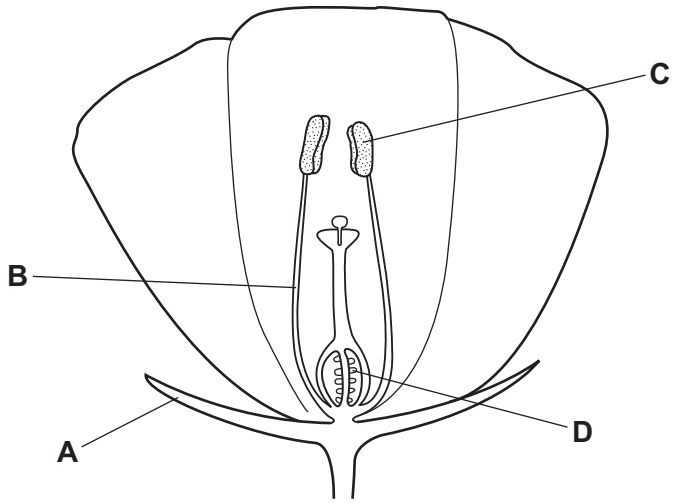
B antibiotic

C depressant

D vaccine

29 The diagram shows a section of an insect-pollinated flower.

Which structure is the anther?



30 In humans, what is an example of a secondary sexual characteristic in **both** males and females?

A hair grows on face

B hips widen

C fat is deposited on hips and thighs

D sexual organs grow

31 Which contraceptive method could provide protection from sexually transmitted infections?

A condom

B diaphragm

C hormone implant

D vasectomy

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[Turn over

32 Which human characteristics are inherited?

	earlobe shape	eye colour	language	skin colour
A	✓	✓	✗	✓
B	✓	✓	✗	✗
C	✓	✗	✗	✓
D	✗	✓	✓	✓

key

✓ = inherited

✗ = not inherited

33 A rabbit has 44 chromosomes in each of its body cells.

Which row correctly describes the gamete cells?

	number of chromosomes	gametes compared to body cells
A	22	genetically identical
B	22	genetically different
C	44	genetically identical
D	44	genetically different

34 Which definition of continuous variation is correct?

A variation that results in a limited number of phenotypes between two extremes

B variation that results in a limited number of phenotypes with no intermediates

C variation that results in a range of phenotypes between two extremes

D variation that results in a range of phenotypes with no intermediates

35 When is evolution by natural selection most likely to occur?

A when there is a stable population of predators

B when there is a stable environment

C when there is less variation in the population

D when there is more variation in the population

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36 What process uses the principal source of energy input to biological systems?

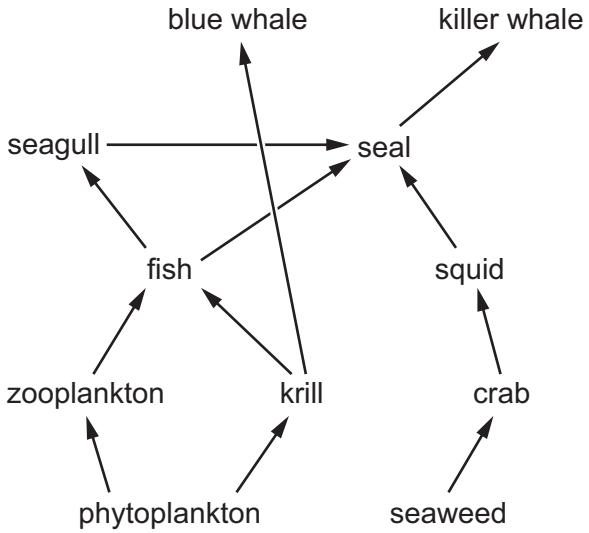
A ingestion

B decomposition

C photosynthesis

D respiration

37 The diagram shows an aquatic food web.



Which statement is correct?

A There are two producers and three herbivores.

B There are two primary consumers and two secondary consumers.

C There are three producers and two primary consumers.

D There are two herbivores and two tertiary consumers.

38 Why are bacteria useful in biotechnology and genetic engineering?

A They can reproduce rapidly.

B They live in soil.

C They may be pathogens.

D They need complex nutrients.

39 What is a description of genetic engineering?

A cross breeding individuals with different important characteristics

B cross breeding individuals with recessive alleles

C inserting a gene from one organism into another

D selecting random mutations to produce new varieties

40 Large areas of tropical forests have been cleared to grow monocultures of palm oil plants.

Which effect will this have on the ecosystem?

A The use of fossil fuels in the area will decrease.

B The use of pesticides in the area will decrease.

C The variety of species in the area will decrease.

D The variety of species in the area will increase.

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