Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/11**

Paper 1 Multiple Choice (Core) **October/November 2022**

45 minutes

You must answer on the multiple choice answer sheet.

You will need: Multiple choice answer sheet
Soft clean eraser
Soft pencil (type B or HB is recommended)

INSTRUCTIONS

- 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 multiple choice answer sheet.
- Follow the instructions on the multiple choice answer sheet.
- Write in soft pencil.
- Write your name, centre number and candidate number on the multiple choice answer sheet in the spaces provided unless this has been done for you.
- Do **not** use correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.

INFORMATION

- The total mark for this paper is 40.
- Each correct answer will score one mark.
- Any rough working should be done on this question paper.

* 5 2 6 9 6 3 2 8 1 7 *

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1 Which process provides an organism with the raw materials needed for tissue repair?

A excretion

B growth

C nutrition

D respiration

2 Which name is given to a group of individuals that can reproduce to produce fertile offspring?

A a genus

B a kingdom

C a species

D an organ system

3 An animal has four legs, hair and a tail.

To which group of vertebrates does it belong?

A amphibians

B birds

C mammals

D reptiles

4 Root hair cells are found on plant roots.

Which feature is present in a root hair cell but **not** in a sperm cell?

A cell membrane

B cell wall

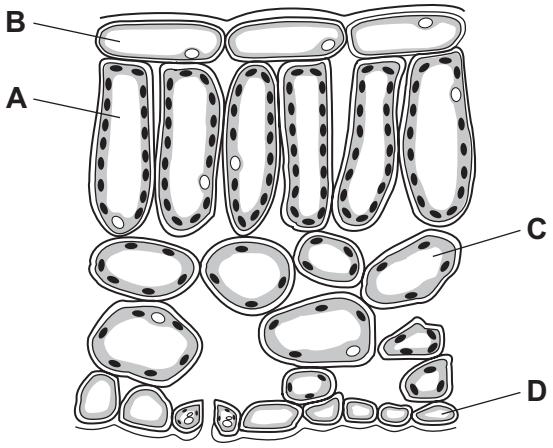
C chloroplasts

D cytoplasm

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5 The diagram shows a cross-section of part of a leaf.

Which type of cell carries out the most photosynthesis?



6 A plant cell is viewed using a microscope with a magnification of ×500. The image of the cell has a width of 20 mm.

What is the actual width of the cell?

A 0.04 mm **B** 0.2 mm **C** 4 mm **D** 25 mm

7 Particles can move into and out of cells by diffusion.

Which statement about diffusion is correct?

A Particles move from a region of lower concentration to a region of higher concentration.

B Particles only move into cells by diffusion.

C The net movement of particles is against a concentration gradient.

D The process involves the random movement of particles.

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8 Potato cylinders were put into different concentrations of sucrose solution for the same amount of time. The masses of the potato cylinders were measured before and after being immersed in the solutions.

The results are recorded in the table.

Which potato cylinder was put into the solution with the highest sucrose concentration?

	mass before immersion / g	mass after immersion / g	percentage change in mass
A	1.95	1.92	–1.5
B	2.05	1.95	–4.9
C	2.10	2.13	+1.4
D	2.25	2.20	–2.2

9 Which chemical is used to test for the presence of protein in a food sample?

A Benedict's solution

B biuret solution

C DCPIP

D iodine solution

10 Which description of an enzyme-catalysed reaction is correct?

A The substrate binds to an enzyme with the same shape and a product is formed.

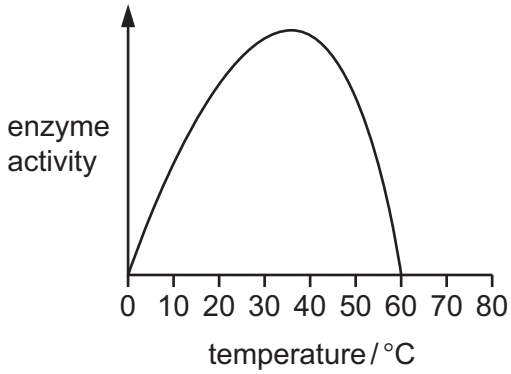
B The product binds to an enzyme with the same shape and a substrate is formed.

C The product binds to an enzyme with a complementary shape and a substrate is formed.

D The substrate binds to an enzyme with a complementary shape and a product is formed.

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11 The graph shows the effect of temperature on the activity of an enzyme.



At which temperature is the enzyme most active?

A 15 °C **B** 25 °C **C** 35 °C **D** 60 °C

12 The substances listed are found in the leaf of a plant.

Which substance is obtained from the soil?

A carbon dioxide

B chlorophyll

C glucose

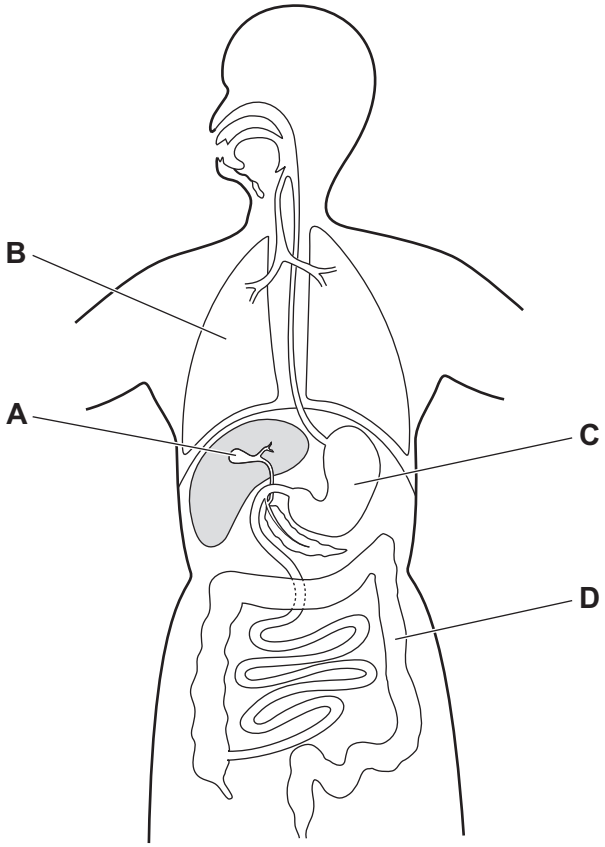
D mineral ions

13 Which row shows what is needed for photosynthesis?

	carbon dioxide	chlorophyll	light	oxygen
A	yes	yes	yes	no
B	yes	no	yes	yes
C	no	no	no	yes
D	no	yes	no	no

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14 Which organ secretes hydrochloric acid?



15 Which statements correctly describe the process of dental decay?

1 Food and bacteria coat the teeth.

2 The bacteria use the sugar in the food for respiration.

3 The bacteria produce acids.

4 The sugar dissolves the enamel.

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

16 A piece of bread begins to taste sweet when it is mixed with saliva and chewed for several minutes.

Which substance in saliva causes this change?

A amylase

B hydrochloric acid

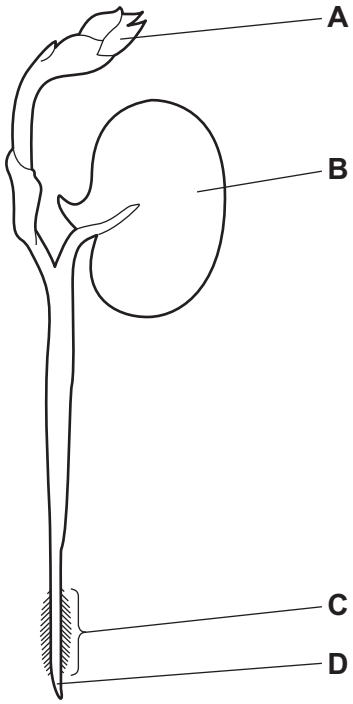
C lipase

D protease

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17 The diagram shows a bean seedling soon after it has germinated.

Where is most water absorbed?



18 Which process occurs during transpiration?

A evaporation of water from the xylem

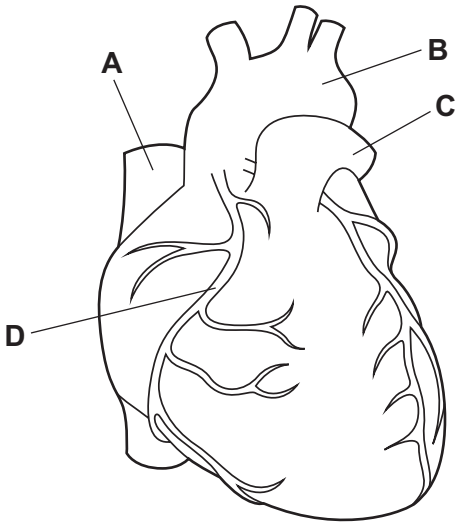
B loss of water by osmosis from the guard cells

C movement of water vapour through the spongy mesophyll by active transport

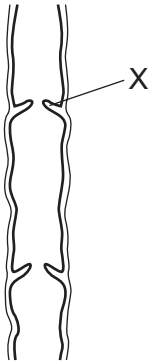
D movement of water vapour through the stomata by diffusion

19 The diagram shows the outside of a human heart.

Which structure is a coronary artery?



20 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

21 *Campylobacter* is a bacterium that can cause food poisoning.

Which word describes *Campylobacter*?

A antibody

B disease

C pathogen

D symptom

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

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

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23 Which row shows processes that all use energy from respiration?

	diffusion	cell division	osmosis	muscle contraction	passage of nerve impulses	active transport
A	✗	✓	✓	✓	✓	✓
B	✓	✗	✓	✗	✗	✗
C	✓	✗	✗	✓	✗	✗
D	✗	✓	✗	✓	✓	✓

key

✓ = uses energy from respiration

✗ = does not use energy from respiration

24 What is the word equation for anaerobic respiration in yeast?

A glucose → alcohol + carbon dioxide

B glucose → alcohol

C glucose → lactic acid + carbon dioxide

D glucose → lactic acid

25 Which substances are excreted from the human body?

1 carbon dioxide

2 urea

3 water

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

26 What is the order of structures that a nerve impulse travels through during a reflex action?

A effector → neurones → receptor

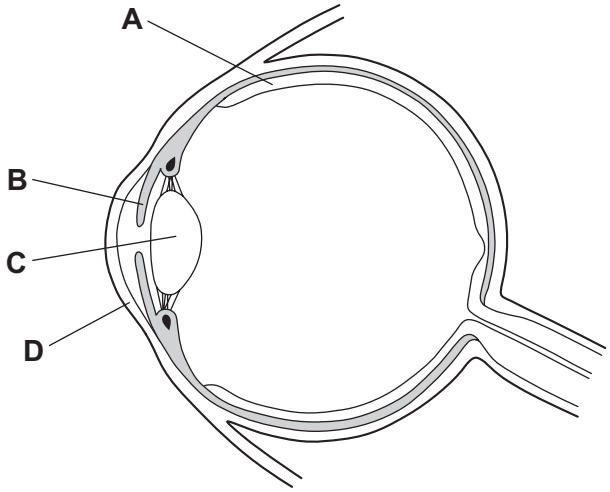
B receptor → neurones → effector

C neurones → effector → receptor

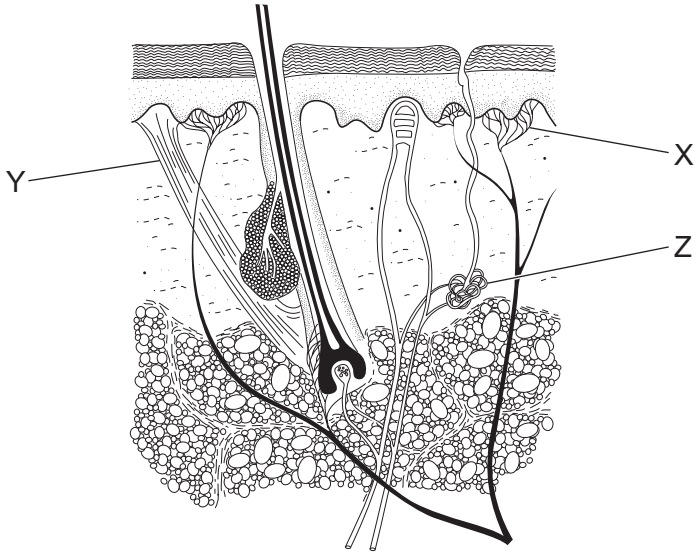
D receptor → effector → neurones

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27 Which structure can reduce how much light enters the eye?



28 The diagram shows a section through human skin.



What are the structures labelled X, Y and Z?

	X	Y	Z
A	receptor	sweat gland	hair erector muscle
B	receptor	hair erector muscle	sweat gland
C	sweat gland	receptor	hair erector muscle
D	sweat gland	hair erector muscle	receptor

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29 A disease cannot be treated with antibiotics.

What could be the reasons for this?

1 It is not a bacterial disease.

2 The pathogen is a virus.

3 The patient has become resistant to the antibiotic.

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

30 Which statement explains the increased risk of having an accident after consuming excessive alcohol?

A Alcohol can be addictive.

B Alcohol increases self-control.

C Alcohol increases reaction time.

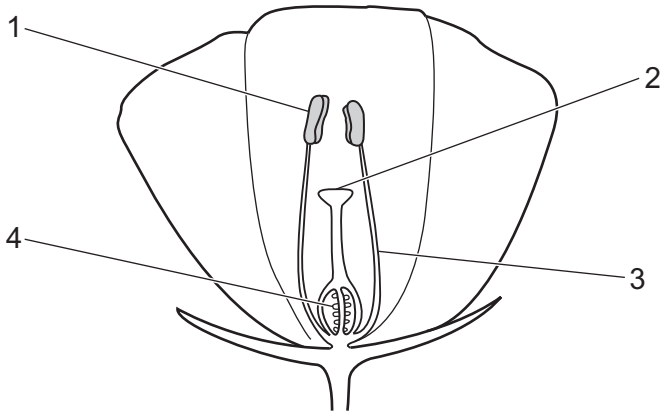
D Alcohol decreases reaction time.

31 The table shows the conditions that four samples of seeds were kept in.

Which sample would germinate?

	water	oxygen
A	present	absent
B	absent	absent
C	present	present
D	absent	present

32 The diagram shows a cross-section of a flower.



During pollination, which labelled structure releases the pollen and which labelled structure receives the pollen?

	releases pollen	receives pollen
A	4	1
B	3	4
C	1	2
D	2	3

33 What is a natural method of birth control?

A contraceptive pill

B diaphragm

C monitoring cervical mucus

D vasectomy

34 Which row shows the results of meiosis?

	cells produced are	gametes produced
A	genetically different	no
B	genetically different	yes
C	genetically identical	no
D	genetically identical	yes

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35 In a species of plant, the allele for red flower colour, R, is dominant to the allele for yellow flower colour, r.

What would be the flower colour of the offspring of a cross between a parent with the genotype Rr and a parent with the genotype rr?

A 100% red

B 75% red and 25% yellow

C 50% red and 50% yellow

D 25% red and 75% yellow

36 What is needed for natural selection to take place?

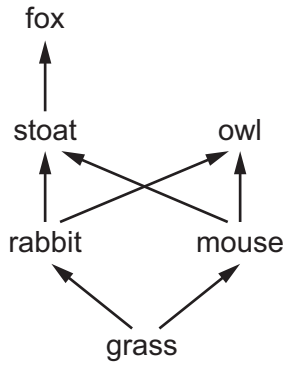
A excess resources for the population

B no variation within a population

C reproduction by individuals that are better adapted to the environment than others

D selection by humans of organisms with desired characteristics

37 The diagram shows a woodland food web.



Which organisms are secondary consumers?

A fox and owl

B fox and stoat

C mouse and rabbit

D owl and stoat

38 Which statement describes a population?

A all the three-spined stickleback fish living in a lake

B all the organisms living in a lake

C all the fish living in a lake

D all the three-spined stickleback fish that have ever lived in a lake

39 Biological washing powders can remove stains from clothes.

What must a washing powder contain, to remove an oil stain from a t-shirt?

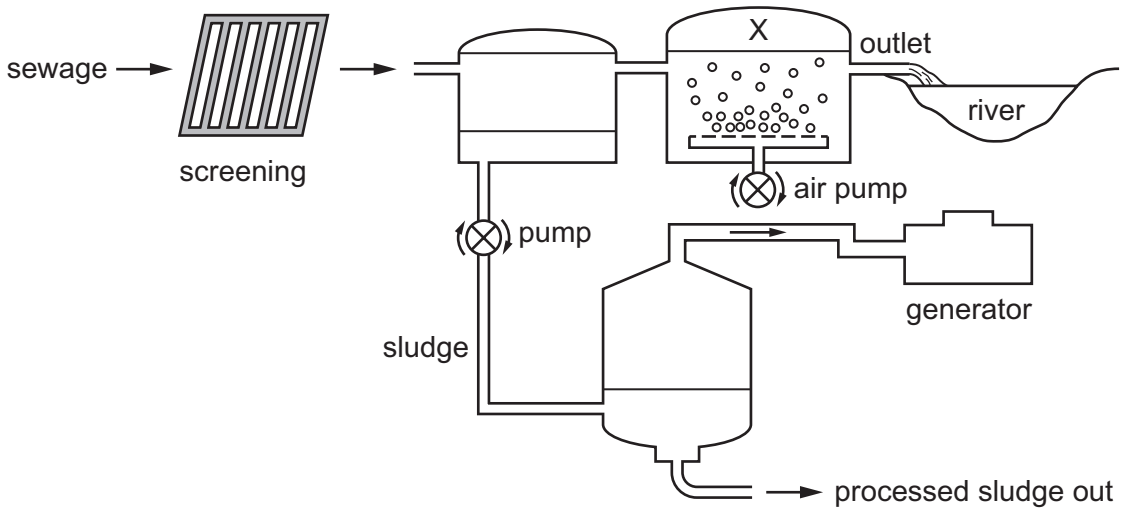
A amylase

B lipase

C pectinase

D protease

40 The diagram shows a sewage treatment process.



What is structure X?

A aeration tank

B anaerobic tank

C settlement tank

D storage tank

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