Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/11**

Paper 1 Multiple Choice (Core) **May/June 2024**

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.

This document has **20** pages. Any blank pages are indicated.

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1 Which process do living organisms use to remove excess carbon dioxide from their bodies?

A excretion

B movement

C nutrition

D respiration

2 The photograph shows an elephant hawk-moth.



Using the features visible in the photograph, to which group of arthropods does the elephant hawk-moth belong?

A arachnids

B crustaceans

C insects

D myriapods

3 What does the term species mean?

A a group of animals that reproduce asexually

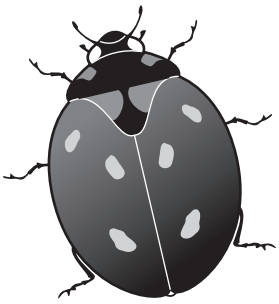
B a group of organisms that can reproduce to produce fertile offspring

C all the plants that live in the same area at the same time

D a group of vertebrates that reproduce sexually

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4 The image shows an animal.



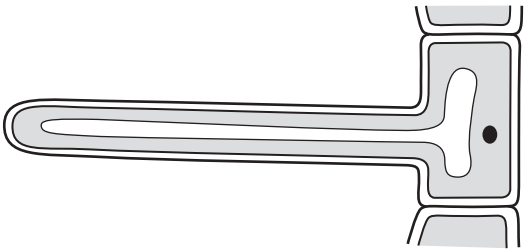
The length of the animal in the image is 36 mm.

The actual length of the animal is 12 mm.

What is the magnification of the image?

A ×0.3 **B** ×3 **C** ×43.2 **D** ×432

5 The diagram shows a plant cell.



Which features show that it is a plant cell?

A It has a cell wall and a vacuole.

B It has a nucleus and cytoplasm.

C It has a nucleus but no chloroplasts.

D It has chloroplasts but no vacuole.

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6 A scientist investigates the effect of two types of antibiotics on bacteria.

The table shows the results.

type of antibiotic	effect on bacteria
penicillin	cells burst
tetracycline	stops protein synthesis

Which cell structure does each antibiotic affect?

A Penicillin affects the cell wall and tetracycline affects the ribosomes.

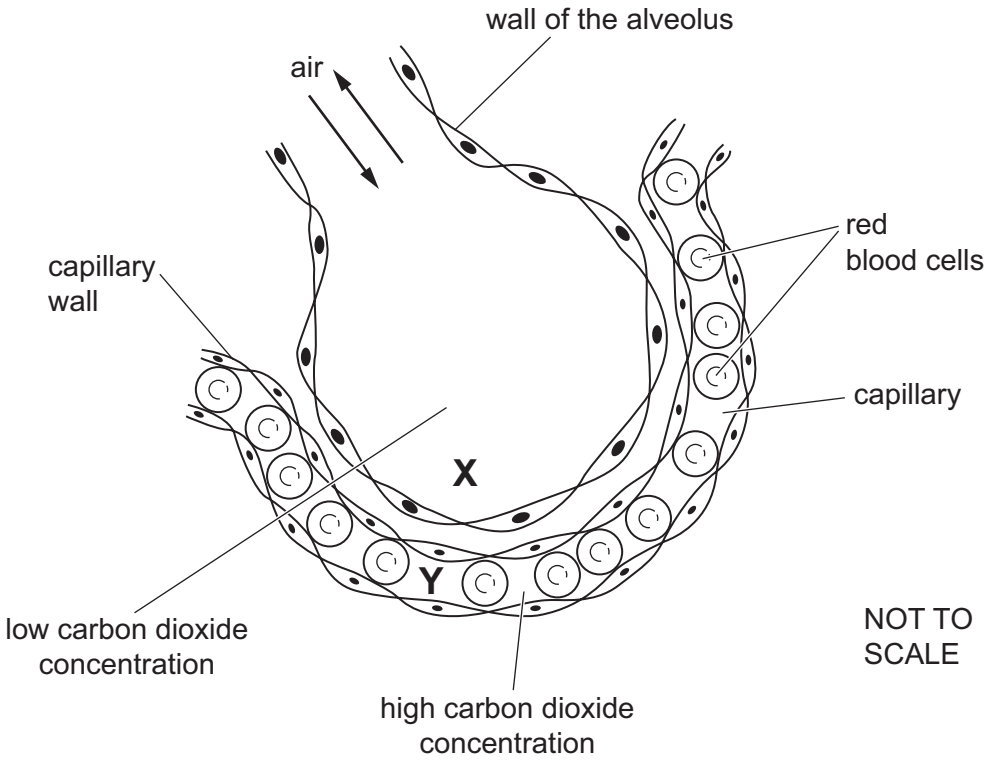
B Penicillin affects the nucleus and tetracycline affects the cytoplasm.

C Penicillin affects the ribosomes and tetracycline affects the cell wall.

D Penicillin affects the vacuole and tetracycline affects the nucleus.

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7 The diagram shows a section through an alveolus and through a capillary.



How does carbon dioxide move from **Y** to **X**?

A by active transport

B by diffusion

C by osmosis

D by transpiration

8 In which row will the diffusion of ions into a cell be the quickest?

	ion concentration in the cell	ion concentration in the external solution	surface area of the cell	width of the cell membrane
A	high	low	large	thin
B	low	high	small	thick
C	high	low	small	thick
D	low	high	large	thin

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[Turn over

9 Large biological molecules are made of smaller molecules.

Which row correctly matches the large molecule with the smaller molecules?

	large molecule	smaller molecules
A	cellulose	fatty acids
B	fat	amino acids
C	protein	amino acids
D	starch	fatty acids

10 A student tests a solution for protein.

Which row shows the correct food test and a positive result?

	name of test	colour seen with a positive result
A	Benedict's test	blue-black
B	Benedict's test	purple
C	biuret test	blue-black
D	biuret test	purple

11 What is a correct statement about enzymes?

A The pH has no effect on the rate of reaction.

B They are denatured at low temperatures.

C They are made of carbohydrates which have specific shapes.

D They speed up chemical reactions.

12 Which statement about enzyme action is correct?

A The shape of the enzyme's active site is complementary to all proteins.

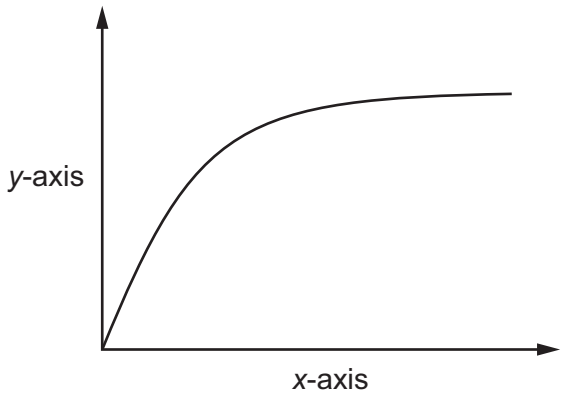
B The shape of the enzyme's active site is complementary to the substrate.

C The shape of the substrate's active site is complementary to the product.

D The shape of the substrate's active site is complementary to the enzyme.

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13 The graph shows the results of an experiment that investigated the effect of light intensity on the rate of photosynthesis.



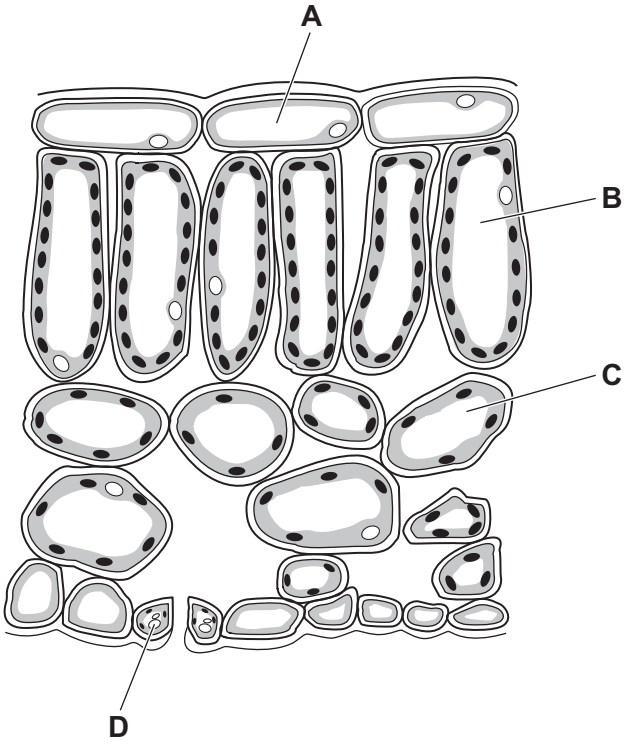
What are the labels for the *x*-axis and the *y*-axis?

	x-axis	*y*-axis
A	light intensity	rate of oxygen production
B	light intensity	rate of carbon dioxide production
C	rate of carbon dioxide production	light intensity
D	rate of oxygen production	light intensity

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14 The diagram shows a cross-section of a leaf.

Which type of cell controls the entry of carbon dioxide into the leaf?



15 The table shows vitamins that should be included in a balanced diet.

Which row shows the correct use in the body and food source for one of these vitamins?

	vitamin	use in body	food source
A	C	strengthens bones and teeth	sugar
B	C	resistance to disease	fish oil
C	D	strengthens bones and teeth	fish oil
D	D	resistance to disease	sugar

16 Which substance is an ion that is used to make chlorophyll?

A calcium

B iron

C magnesium

D starch

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17 What is the function of the gall bladder?

A production of bile

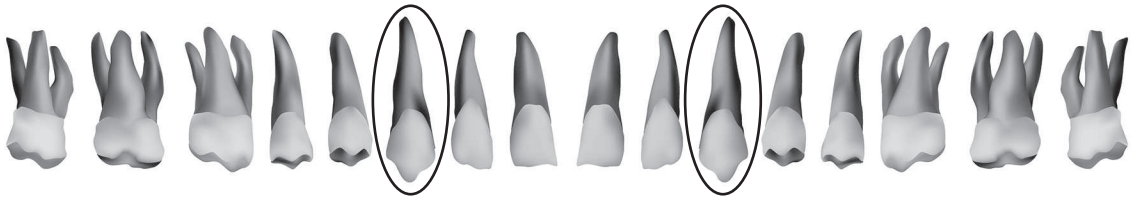
B production of gastric juice

C storage of bile

D storage of gastric juice

18 The diagram shows the different types of teeth found in the upper jaw of a human.

They are in the same order as they are found in the jaw.



Which type of tooth is circled?

A canine

B incisor

C molar

D premolar

19 A person ate food X. Chemical digestion of food X occurred in the mouth and small intestine but **not** in the stomach.

What was in food X?

A fat

B ions

C protein

D starch

20 What is present in a vascular bundle?

A anthers

B guard cells

C palisade cells

D xylem vessels

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21 What is the pathway taken by water from the soil to the leaf?

A root hair cells → root cortex → mesophyll → xylem

B root hair cells → root cortex → xylem → mesophyll

C root cortex→ root hair cells → mesophyll → xylem

D root cortex → root hair cells→ xylem → mesophyll

22 What are methods for monitoring the activity of the heart?

	ECG	measuring pulse rate	listening to sounds of valves closing
A	✓	✗	✗
B	✗	✓	✓
C	✓	✗	✓
D	✓	✓	✓

key

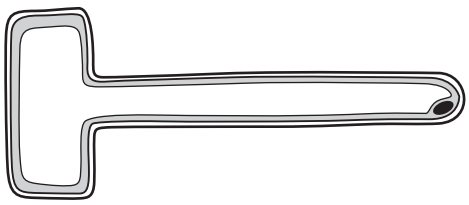
✓ = yes

✗ = no

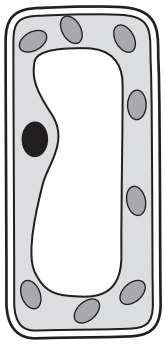
23 The diagrams show four different types of cells.

Which cell contains haemoglobin?

A

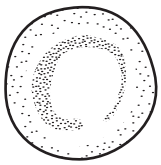


B



NOT TO SCALE

C



D



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24 What is a direct way of transmitting a pathogen?

A by contact with contaminated air

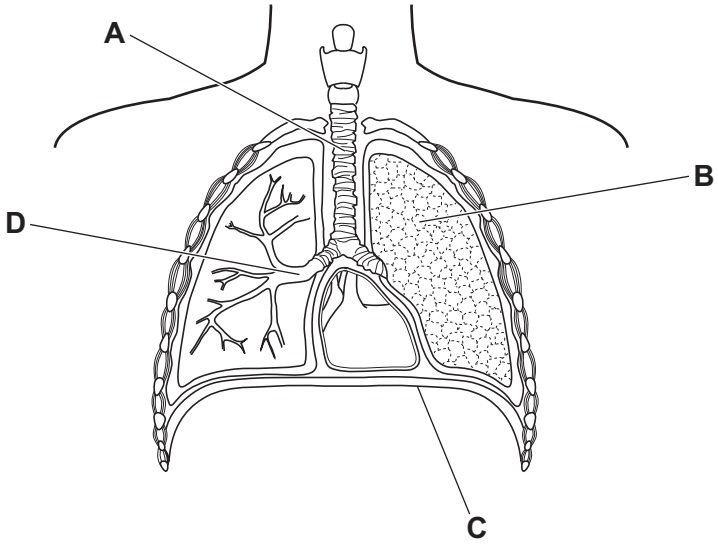
B by contact with contaminated blood

C by contact with contaminated food

D by contact with contaminated surfaces

25 The diagram shows the breathing system.

Which structure is the diaphragm?



26 What is the word equation for aerobic respiration?

A carbon dioxide + glucose → oxygen + water

B carbon dioxide + water → oxygen + glucose

C oxygen + glucose → carbon dioxide + water

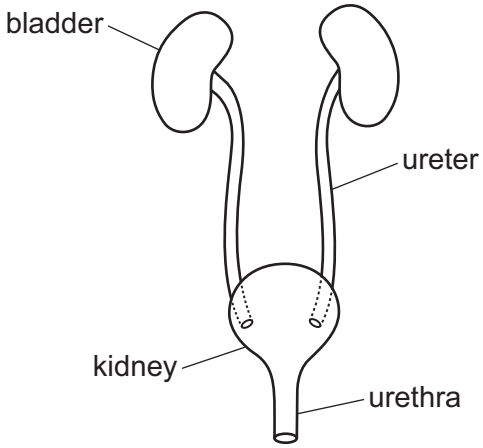
D oxygen + water → carbon dioxide + glucose

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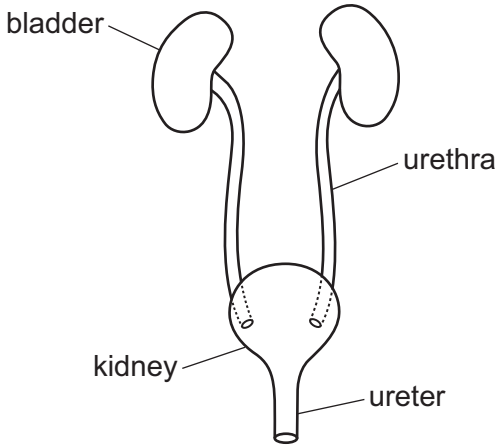
[Turn over

27 Which diagram of the excretory system is labelled correctly?

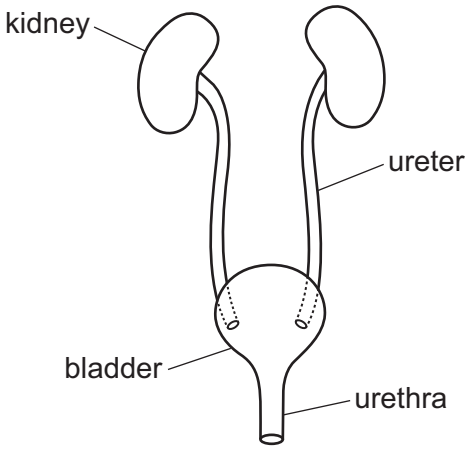
A



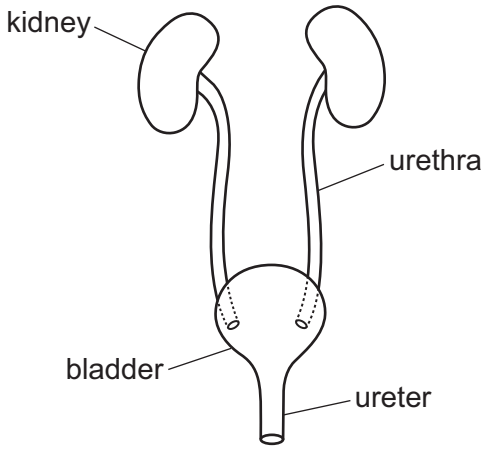
B



C

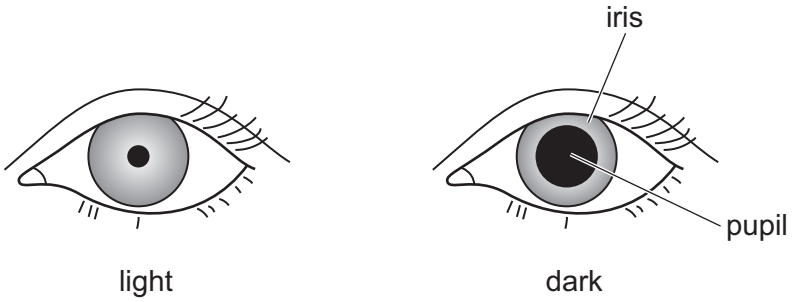


D



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28 The diagram shows an iris and a pupil in different light conditions.



Which characteristic of living organisms is this an example of?

A growth

B movement

C excretion

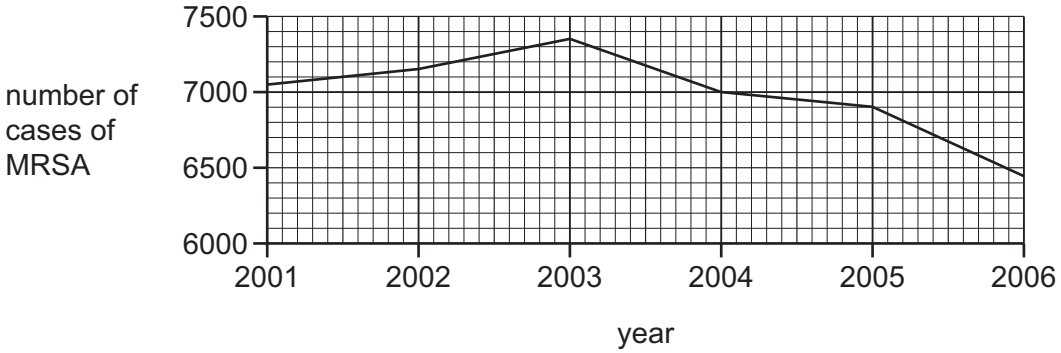
D sensitivity

29 Where is insulin secreted, and what is its effect on blood glucose concentration?

	secreted by	effect on blood glucose concentration
A	liver	increases
B	liver	decreases
C	pancreas	increases
D	pancreas	decreases

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30 The graph shows the number of cases of MRSA in one country between 2001 and 2006.



Between which years was the **greatest** change in the number of cases of MRSA?

A 2002 and 2003

B 2003 and 2004

C 2004 and 2005

D 2005 and 2006

31 Which row describes an insect-pollinated flower?

	anther	pollen grain	stigma
A	inside flower	large and sticky	inside flower
B	outside flower	large and sticky	inside flower
C	inside flower	small and light	outside flower
D	outside flower	small and light	outside flower

32 Which part of the female reproductive system releases egg cells?

A cervix

B ovary

C oviduct

D uterus

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33 Which adaptive feature of sperm provides the energy that enables it to swim?

A the acrosome

B the cell membrane

C the flagellum

D the mitochondria

34 What is a use of yeast in biotechnology?

A aerobic respiration to make biofuels

B anaerobic respiration to make bread

C aerobic respiration to make alcohol

D anaerobic respiration to make human proteins

35 Many mammals have coloured fur and many birds have coloured feathers.

Which uses of colour could help males survive long enough to pass on their features to their offspring?

	hiding from animals which might eat them	hiding from animals which they could eat	warning animals that they are poisonous
A	✓	✓	✓
B	✓	✓	✗
C	✗	✓	✗
D	✓	✗	✓

key

✓ = yes

✗ = no

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[Turn over

36 The list shows statements about selection.

1 Individuals reproduce and pass on their alleles to the next generation.
2 Genetic variation exists between individuals and many offspring are produced.
3 Individuals struggle for survival and compete for resources.
4 Individuals that are better adapted to the environment survive.
5 Individuals with desirable features are selected by humans.

Which statements are correct descriptions of natural selection?

A 1, 2, 3 and 4
B 1, 2 and 5 only
C 2, 3 and 4 only
D 3, 4 and 5 only

37 Some of the processes involved in the carbon cycle are listed.

1 combustion
2 decomposition
3 photosynthesis
4 respiration

During the carbon cycle, which processes release carbon dioxide into the atmosphere?

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

38 What are the effects of sewage pollution on the biodiversity and the number of bacteria in a river?

	biodiversity	number of bacteria
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

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39 The increase of which gases contributes to an enhanced greenhouse effect?

A carbon dioxide and methane

B methane and nitrogen

C nitrogen and oxygen

D oxygen and carbon dioxide

40 Why are bacteria used in biotechnology?

A Bacteria reproduce rapidly.

B Bacterial cells contain a nucleus.

C Bacterial cells contain cytoplasm.

D Bacterial cells do **not** produce complex molecules.

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