Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/13**

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

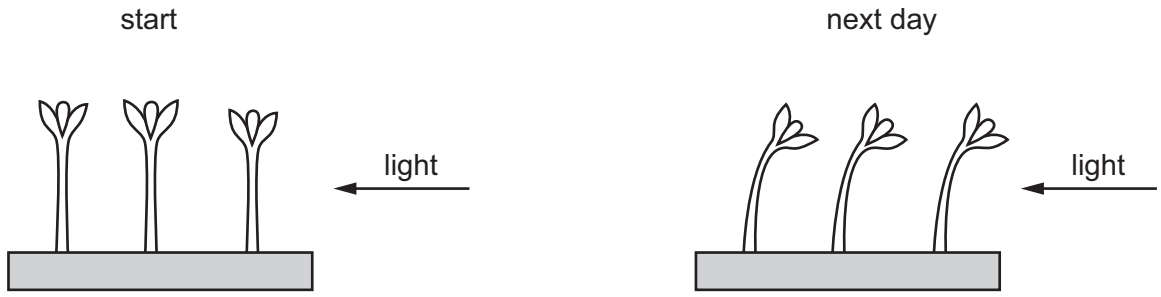
- The total mark for this paper is 40.
- Each correct answer will score one mark.
- Any rough working should be done on this question paper.

This document has **16** pages. Any blank pages are indicated.

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[Turn over

1 The diagram shows what happened in an experiment with plant seedlings.



Which characteristic of living things made the seedlings grow towards the light?

A excretion

B nutrition

C respiration

D sensitivity

2 Which structure or substance is found in a plant root?

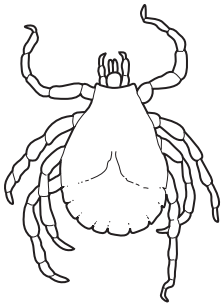
A dentine

B platelet

C ventricle

D xylem

3 The diagram shows an arthropod.



Which group of arthropods does it belong to?

A arachnids

B crustaceans

C insects

D myriapods

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4 Which structure is present in plant cells but absent from bacterial cells?

A cell membrane

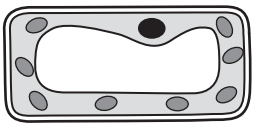
B cell wall

C cytoplasm

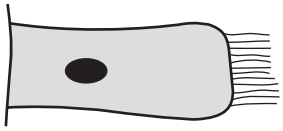
D nucleus

5 Which cell is adapted for swimming?

A



B



C



D



NOT TO SCALE

6 A pollen grain was viewed with a microscope using ×500 magnification.

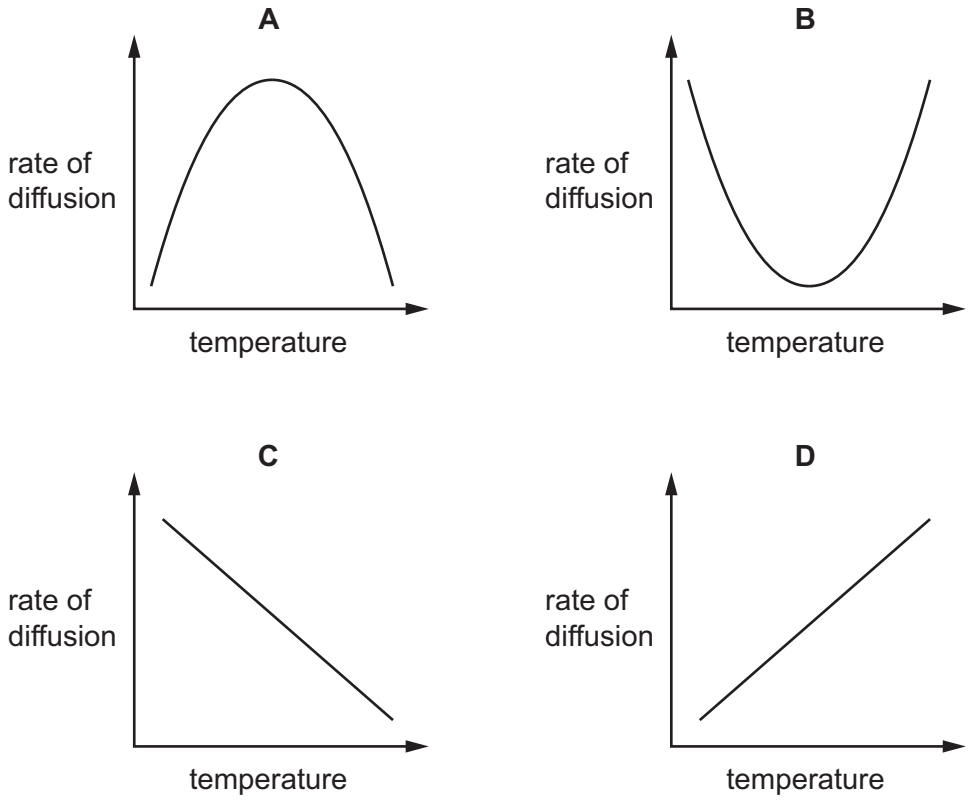
The image size of the pollen grain was measured as 75 mm.

Which calculation would give the actual size of the pollen grain in millimetres?

A $\frac{75}{500}$ **B** $\frac{500}{75}$ **C** $\frac{75 \times 1000}{500}$ **D** $\frac{500}{75 \times 1000}$

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7 Which graph represents the effect of increasing temperature on the rate of diffusion?



8 Which characteristics are correct for **both** osmosis and diffusion?

	require a partially permeable membrane	require a concentration gradient	are energy-consuming processes
A	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✗
D	✗	✗	✓

key
✓ = yes
✗ = no

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9 Which row describes active transport?

	direction of movement of particles through a membrane	using energy from respiration
A	against the concentration gradient	no
B	down the concentration gradient	yes
C	against the concentration gradient	yes
D	down the concentration gradient	no

10 What is a correct statement about biological molecules?

A Biuret reagent is used to test for reducing sugars.

B Glycogen is made of smaller glycerol molecules.

C Oils contain the chemical elements carbon, hydrogen, oxygen and nitrogen.

D Protein is made of smaller amino acid molecules.

11 Enzyme X digests starch in the duodenum.

The same volumes of starch suspension and enzyme X were put into four test-tubes, **A**, **B**, **C** and **D**. Each test-tube was kept at a different pH and temperature, as shown in the table.

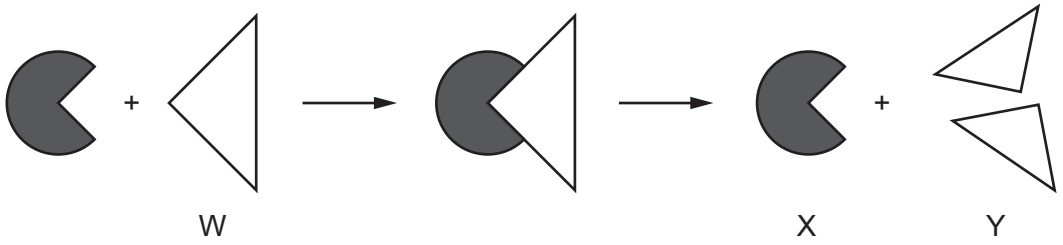
In which test-tube will starch digestion be the quickest?

	pH	temperature / °C
A	2	20
B	2	35
C	7	20
D	7	35

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[Turn over

12 The diagram represents enzyme action in a chemical reaction.



What are parts W, X and Y in this chemical reaction?

	enzyme	product	substrate
A	W	X	Y
B	X	W	Y
C	X	Y	W
D	Y	W	X

13 Aquatic plants were placed in two test-tubes. Each test-tube was sealed to prevent the entry or exit of gases. One test-tube was kept in the light and one test-tube was kept in the dark.

What needs to be added to the test-tubes to detect any differences in gas exchange?

A Benedict's solution

B biuret reagent

C hydrogencarbonate indicator

D iodine solution

14 Which part of a leaf contains the highest concentration of chloroplasts?

A lower epidermis

B palisade layer

C upper epidermis

D vascular bundle

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15 Which four organs are part of the digestive system?

A lung, liver, salivary gland, pancreas

B kidney, liver, colon, ureter

C pancreas, liver, uterus, gall bladder

D salivary gland, liver, gall bladder, pancreas

16 What should be increased in the diet of a person suffering from constipation?

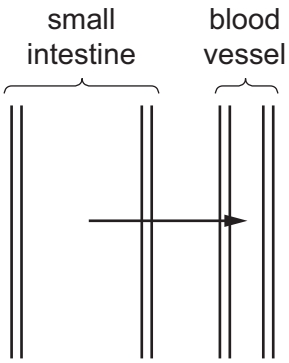
A fats

B fibre (roughage)

C iron

D protein

17 The diagram shows part of the small intestine and an associated blood vessel.



What is represented by the arrow?

A absorption of sugars

B assimilation of sugars

C digestion of sugars

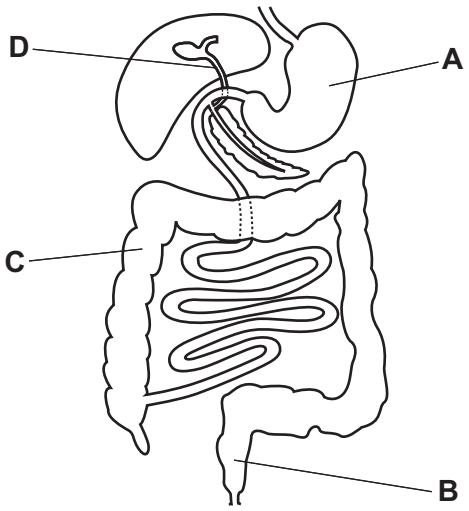
D ingestion of sugars

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[Turn over

18 The diagram shows the human alimentary canal.

Which labelled part absorbs the most water?



19 Which description of molar teeth is correct?

A pointed teeth used to tear food

B sharp-edged teeth to cut food

C teeth with a jagged surface to bite food

D teeth with a large surface to grind food

20 Which organs are involved in physical digestion?

	mouth	oesophagus	stomach
A	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✗
D	✗	✗	✓

key

✓ = yes

✗ = no

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21 What is produced by the action of lipase on fats?

1 amino acids

2 fatty acids

3 glycerol

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

22 Where are most nutrients absorbed in the digestive system?

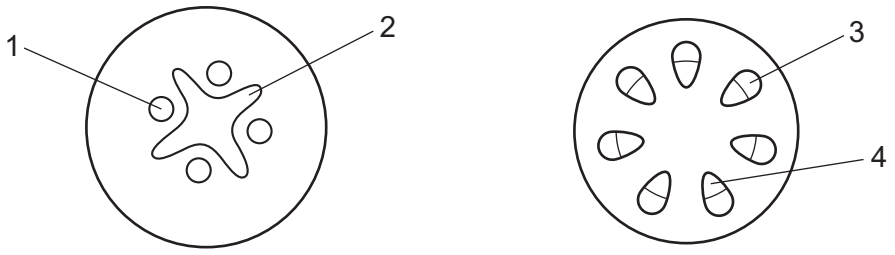
A colon

B oesophagus

C small intestine

D stomach

23 The diagrams show a section through a root and a section through a stem.



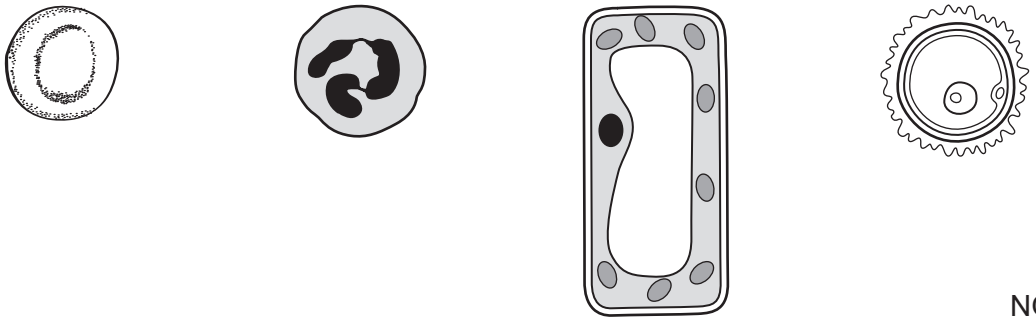
root stem

In which tissues are amino acids transported?

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

24 Which diagram represents a cell responsible for the transport of oxygen?

A **B** **C** **D**



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[Turn over

25 Transmissible diseases are transmitted when a pathogen is passed from one host to another.

What is an example of direct contact?

A breathing in pathogens

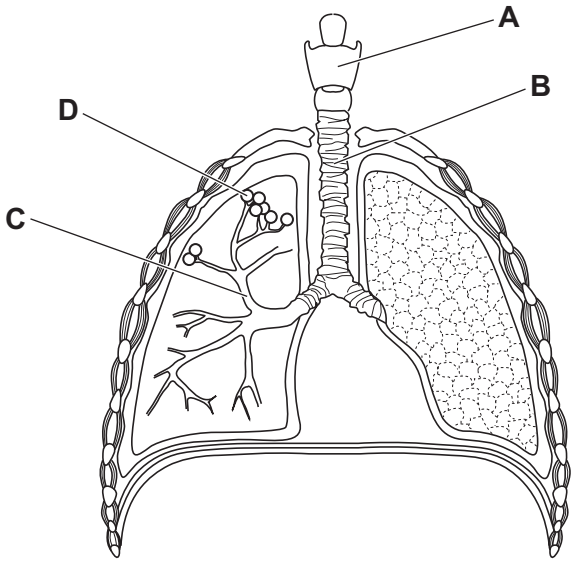
B contact with blood or other body fluids

C contact with contaminated surfaces

D eating or handling contaminated food

26 The diagram shows the breathing system in humans.

Which labelled part is surrounded by blood capillaries for gas exchange?



27 What are the products of aerobic respiration in plants?

A alcohol and carbon dioxide

B carbon dioxide and lactic acid

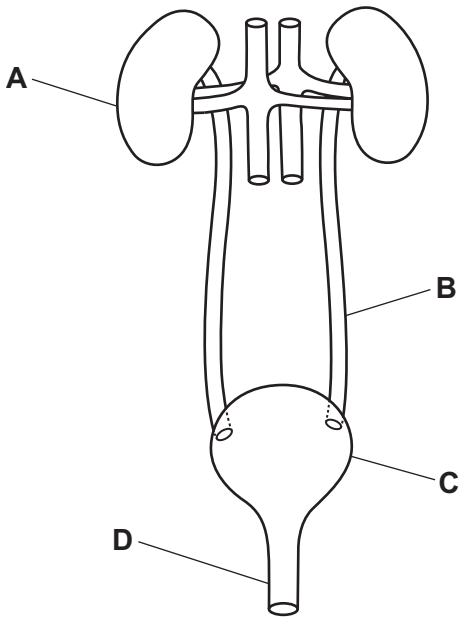
C carbon dioxide and water

D lactic acid only

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28 The diagram shows some structures associated with human excretion.

Which structure excretes urea?



29 Which organ secretes insulin and how is it transported?

	organ that secretes insulin	insulin transported by
A	adrenal glands	blood
B	adrenal glands	nervous system
C	pancreas	blood
D	pancreas	nervous system

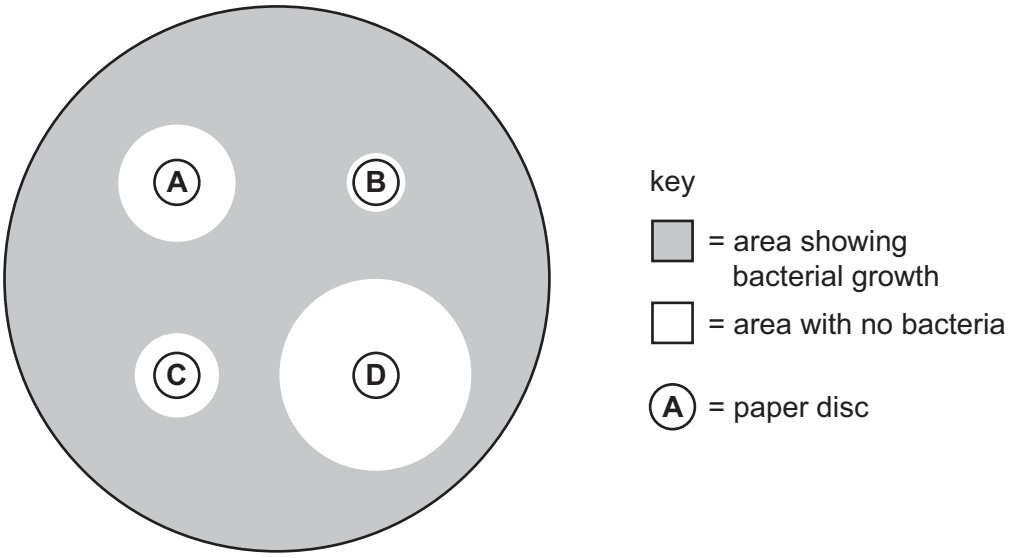
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[Turn over

30 In an experiment, bacteria were grown on agar. Four paper discs, **A**, **B**, **C** and **D**, were placed on top of the agar. Each paper disc contained a different antibiotic.

The diagram shows the agar after 48 hours. The clear areas show where bacteria are **not** growing.

Which antibiotic are the bacteria most resistant to?



31 The list shows secondary sexual characteristics.

1 Hair grows on the face.

2 Hips become wider.

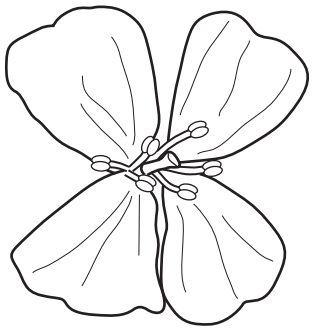
3 Voice becomes deeper.

Which secondary sexual characteristics are caused by testosterone?

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

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32 The diagram shows a flower seen from above.



Use the key to find the name of the family to which it belongs.

1	four petals	go to 2
	five petals	go to 3
2	two stamens	**A** *Scrophulariaceae*
	six stamens	**B** *Brassicaceae*
3	petals joined	**C** *Caryophyllaceae*
	petals separate	**D** *Rosaceae*

33 Which statement about a heterozygous individual is correct?

A is pure-breeding

B has two identical alleles

C has a dominant allele and a recessive allele

D expresses the recessive allele in its phenotype

34 What is an example of continuous variation?

A ABO blood groups in humans

B body mass in humans

C seed shape in pea plants

D seed colour in pea plants

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[Turn over

35 A particular animal species only eats plants.

What is a description of this animal species?

A a carnivore

B a primary consumer

C a producer

D a secondary consumer

36 In the carbon cycle, which process uses carbon dioxide?

A combustion

B decomposition

C respiration

D photosynthesis

37 Which statements about deforestation are correct?

1 Deforestation causes an increase in atmospheric carbon dioxide.

2 Deforestation causes an increase in biodiversity.

3 Deforestation causes an increase in the loss of soil.

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

38 Which two gases enhance the greenhouse effect?

A carbon dioxide and methane

B carbon dioxide and nitrogen

C methane and oxygen

D nitrogen and oxygen

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39 Which row shows whether the two natural resources are **always** managed sustainably?

	using fish stocks	using wood from forests
A	yes	yes
B	yes	no
C	no	yes
D	no	no

40 Which features make bacteria useful in biotechnology?

	features of bacteria		
	have cell walls	make complex molecules	have a rapid reproduction rate
A	✓	✓	✗
B	✓	✗	✗
C	✗	✓	✓
D	✗	✗	✓

key
✓ = feature is useful in biotechnology
✗ = feature is **not** useful in biotechnology

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