Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/12**

Paper 1 Multiple Choice (Core) **May/June 2020**

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.

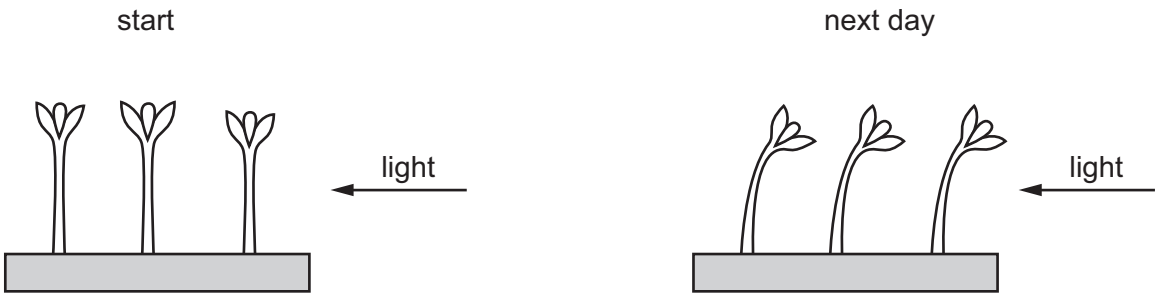
INFORMATION

- The total mark for this paper is 40.
- Each correct answer will score one mark. A mark will not be deducted for a wrong answer.
- Any rough working should be done on this question paper.

This document has **16** pages. Blank pages are indicated.

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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 A rat has the scientific name *Rattus rattus*.

What do the two parts of this name refer to?

A genus and species

B kingdom and genus

C kingdom and species

D variety and genus

3 Which list contains **only** arthropods?

A amphibians, insects, myriapods

B arachnids, crustaceans, myriapods

C crustaceans, insects, fish

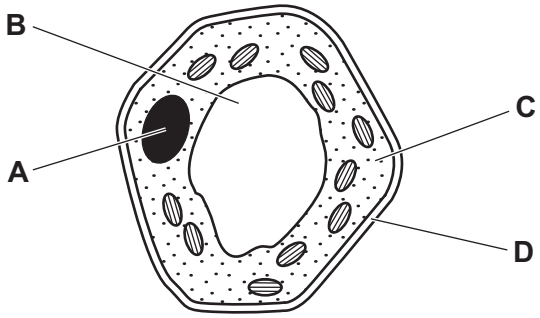
D insects, myriapods, reptiles

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4 The diagram shows a plant cell.

A biologist wants to find out the number of chromosomes it contains.

Which labelled part should be examined more closely?



5 What are leaves examples of?

A cells

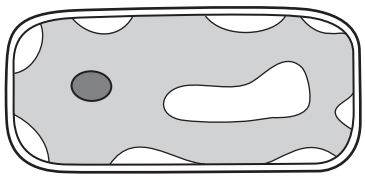
B organs

C organ systems

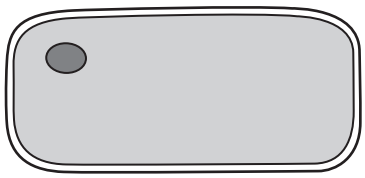
D tissues

6 Which diagram shows the appearance of a plant cell several minutes after it has been placed in a concentrated solution of sugar?

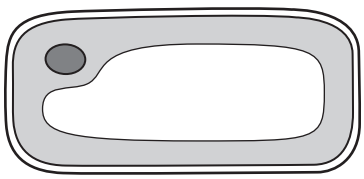
A



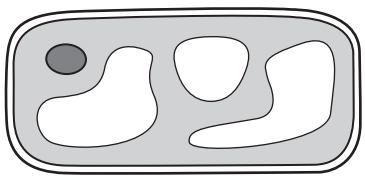
B



C



D



7 Uncooked pieces of potato of identical size were placed in different liquids for one hour and then measured.

Which liquid will cause a decrease in the size of the piece of potato?

A pure water

B sugar solution less concentrated than the potato cell contents

C sugar solution more concentrated than the potato cell contents

D sugar solution with the same concentration as the potato cell contents

8 Which food-testing solution shows a positive result when it turns from blue to purple?

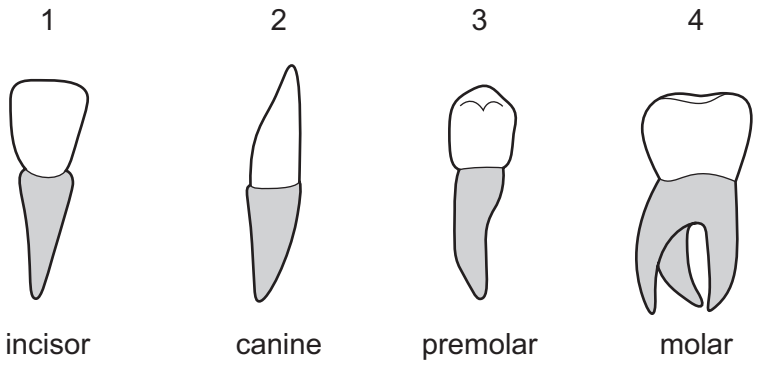
A Benedict's solution

B biuret solution

C ethanol

D iodine solution

9 The diagram shows the four types of human tooth.



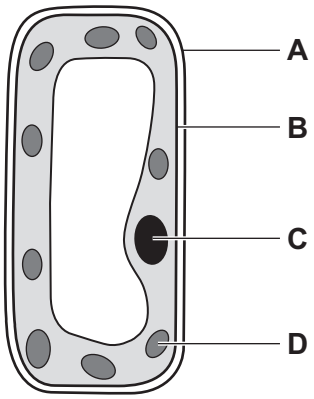
Which teeth are used for grinding food?

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

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10 The diagram shows a plant cell.

In which part of the cell does photosynthesis occur?



11 Which substance found in a healthy diet helps to prevent constipation?

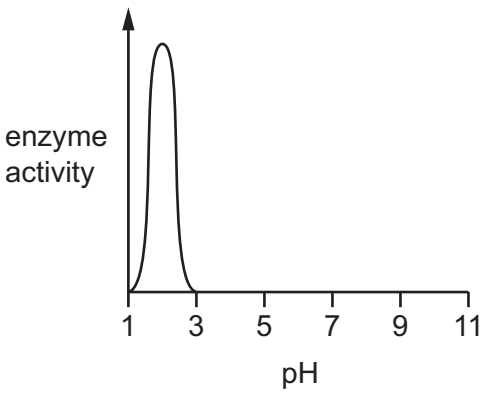
A fat

B fibre

C minerals

D vitamins

12 The graph shows the effect of pH on the activity of an enzyme.



In which part of the alimentary canal would this enzyme be **most** active?

A large intestine

B mouth

C small intestine

D stomach

13 After passing through the root hair cells of a plant, what is the next tissue through which water passes?

A cortex

B epidermis

C mesophyll

D xylem

14 From which part of a leaf does most water evaporate during transpiration?

A the cuticle

B the guard cells

C the spongy mesophyll cells

D the xylem vessels

15 Which blood vessel carries blood to the muscle of the heart?

A coronary artery

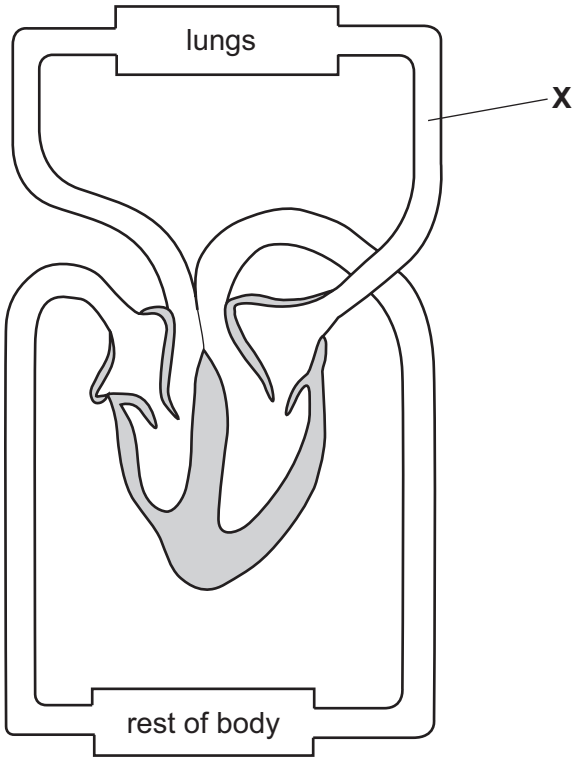
B pulmonary artery

C renal vein

D vena cava

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16 The diagram shows the human heart and main blood vessels.



What is the blood vessel labelled **X**?

A aorta

B pulmonary artery

C pulmonary vein

D vena cava

17 What is a chemical barrier to pathogens?

A nose hairs

B skin

C stomach acid

D white blood cells

18 What is the site of gas exchange in humans?

A nose

B alveoli

C bronchus

D trachea

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19 The substances listed are associated with aerobic respiration.

1 carbon dioxide

2 glucose

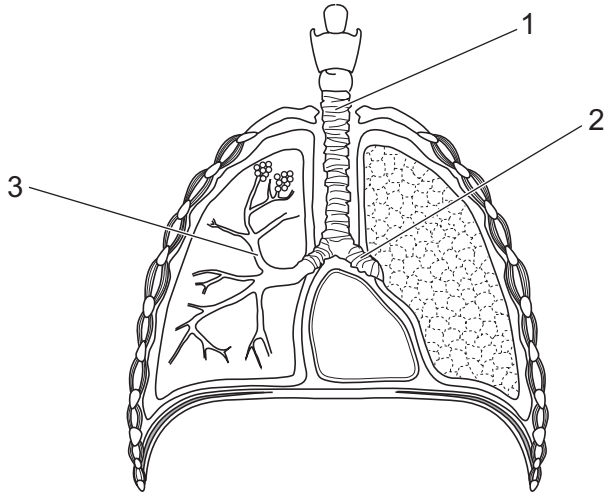
3 oxygen

4 water

Which substances are the products of aerobic respiration?

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

20 The diagram shows the breathing system.

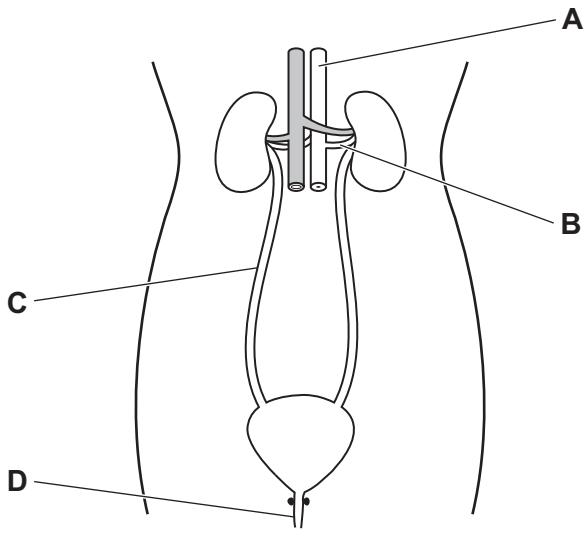


What are the labelled structures?

	1	2	3
A	bronchus	bronchiole	trachea
B	bronchiole	bronchus	trachea
C	trachea	bronchus	bronchiole
D	trachea	diaphragm	bronchus

21 The diagram shows the human excretory system.

Which labelled structure is the ureter?



22 Which structure transfers information to the central nervous system?

A effector

B motor neurone

C relay neurone

D sensory neurone

23 Examples of responses to hormones are listed.

1 increased breathing rate

2 increased pulse rate

3 growth of body hair

4 widened pupils

Which responses are caused by the hormone adrenaline?

A 1, 2, 3 and 4

B 1, 2 and 4 only

C 2, 3 and 4 only

D 3 and 4 only

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24 Which part of the eye focuses light?

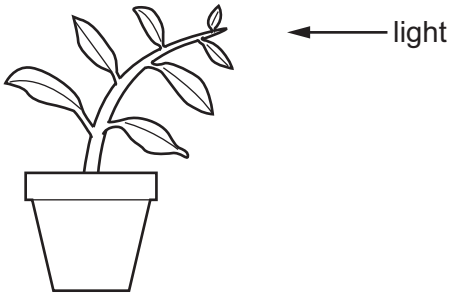
A cornea

B iris

C lens

D retina

25 The diagram shows a plant shoot growing towards the light.



Which response is shown by the shoot of the plant?

A gravitropism

B photosynthesis

C phototropism

D reflex

26 Which statement about antibiotic use in humans is correct?

A Different types of antibiotic are used to remove antibodies from the body.

B Antibiotics are injected in childhood to prevent diseases in adults.

C Antibiotics are used to treat diseases caused by viruses.

D Different types of antibiotic are used because bacteria can become resistant.

27 Which conditions are always required for the germination of seeds?

	condition			
	light	oxygen	suitable temperature	water
A	✓	✓	✗	✓
B	✓	✗	✓	✗
C	✗	✓	✗	✓
D	✗	✓	✓	✓

key

✓ = required

✗ = not required

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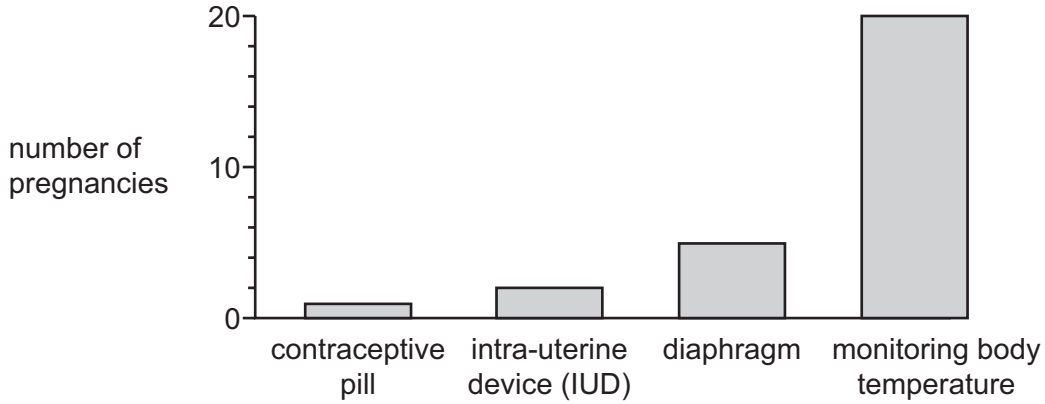
28 Where do fertilisation and pollination occur in a flower?

	fertilisation	pollination
A	carpel	ovule
B	ovary	stigma
C	stigma	anther
D	style	carpel

29 When do the following stages occur in a typical human menstrual cycle?

	bleeding	ovulation
A	days 13 – 14	days 6 – 25
B	days 1 – 4	days 27 – 28
C	days 6 – 25	days 1 – 4
D	days 1 – 4	days 13 – 14

30 The graph shows the number of pregnancies in 4 groups of 100 women. Each group used a different method of contraception.



The method of contraception which is the **most** effective is

A barrier.

B chemical.

C natural.

D surgical.

31 The photograph shows a tiger.



Which visible adaptive feature makes the tiger a good predator?

A large teeth

B long whiskers

C small ears

D thick fur

32 Which statement about the human sex chromosomes is correct?

A Females have an X chromosome and a Y chromosome.

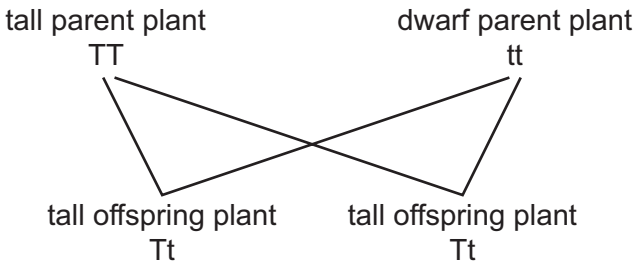
B Females have two Y chromosomes.

C Males and females have at least one X chromosome.

D Males and females have at least one Y chromosome.

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33 The diagram shows the inheritance of height in pea plants.



Which plants have a heterozygous genotype?

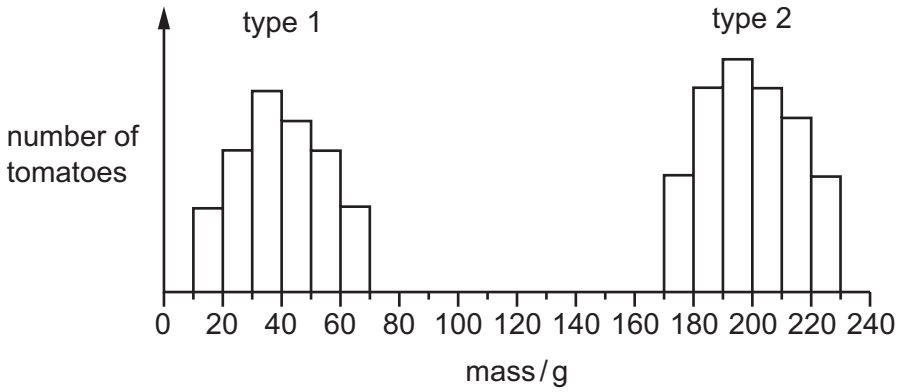
A both parent plants

B dwarf parent plant only

C both offspring plants

D tall parent plant only

34 The graph shows the masses of two different types of tomato.



What can be concluded from the graph?

A Genes do not affect the mass of tomatoes.

B Type 1 tomatoes show continuous variation.

C Type 2 tomatoes are sometimes smaller than type 1 tomatoes.

D Type 2 tomatoes show discontinuous variation.

35 Which is an example of a population?

A all the animals and plants living in a lake

B all the different herbivores in a forest

C all the mahogany trees growing in a forest

D all the species of animals in Africa

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[Turn over

36 The diagram shows a food chain in a rock pool.

seaweed → whelks → crabs → seagulls

What will happen if the number of secondary consumers increases?

There will be

A fewer crabs.

B fewer seagulls.

C fewer whelks.

D less seaweed.

37 What is the role of anaerobic respiration in bread-making?

A to produce alcohol to flavour the bread

B to produce gas to make the bread rise

C to release enough energy to bake the bread

D to release enough lactic acid to kill the yeast

38 A crop plant has been genetically modified to make it resistant to herbicides.

Which is a possible disadvantage of introducing this new crop plant?

A Loss of weeds reduces competition.

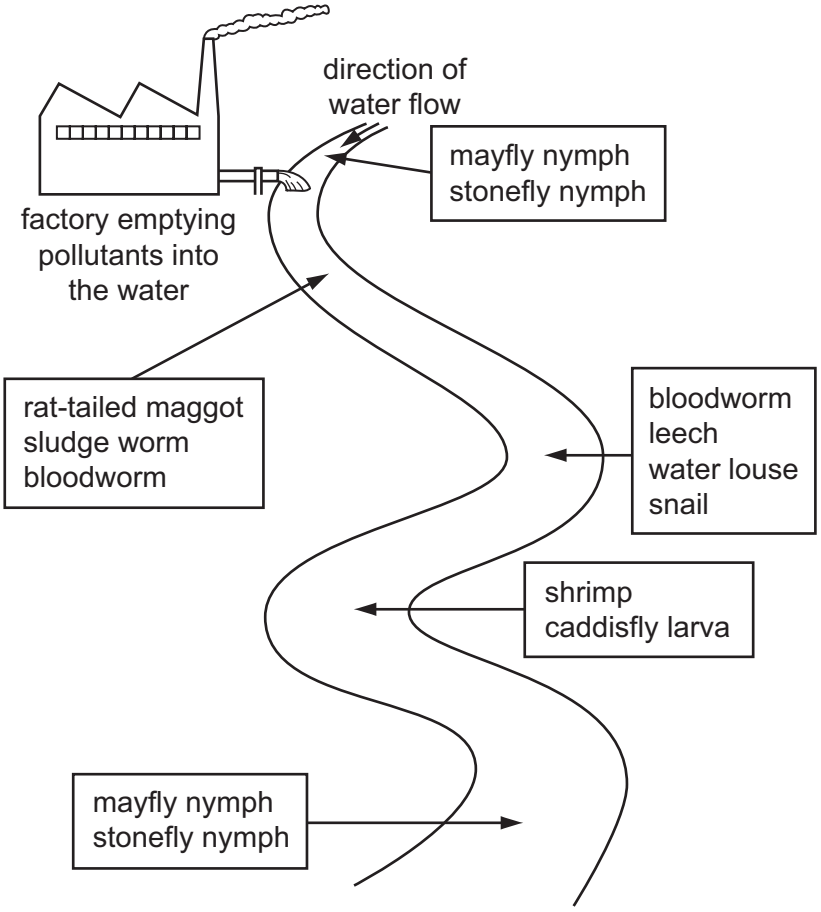
B Some weeds might become resistant to the herbicide.

C The crop plant is unharmed and produces a higher yield.

D The new gene will appear in new generations of the crop.

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39 The diagram shows the results of a survey on the types of animals found along a stretch of river near to a factory.



Which animal lives in the least polluted water?

A bloodworm

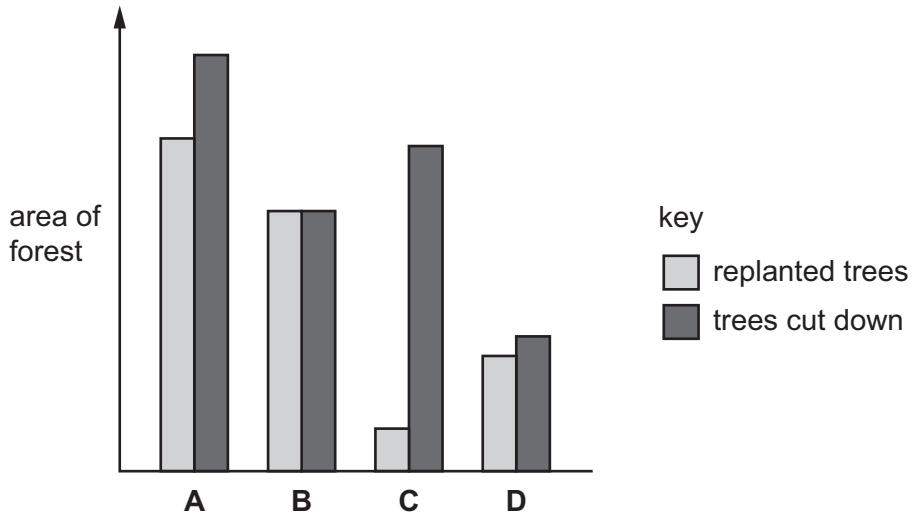
B caddisfly larva

C leech

D stonefly nymph

40 The graph shows four areas of forest that were cut down and then replanted with trees in one part of the world between 1995 and 2015.

Which area of forest was used most sustainably?



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