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.

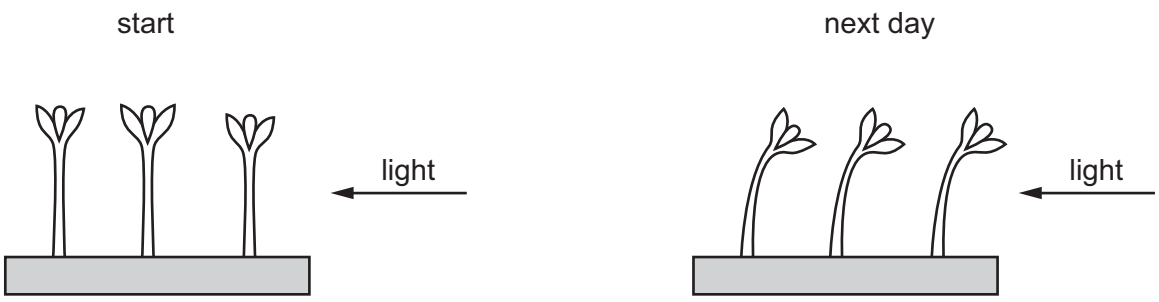
INFORMATION

- 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.

IB20 06_0610_12/4RP
© UCLES 2020

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

View solution



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*.

View solution

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?

View solution

A amphibians, insects, myriapods

B arachnids, crustaceans, myriapods

C crustaceans, insects, fish

D insects, myriapods, reptiles

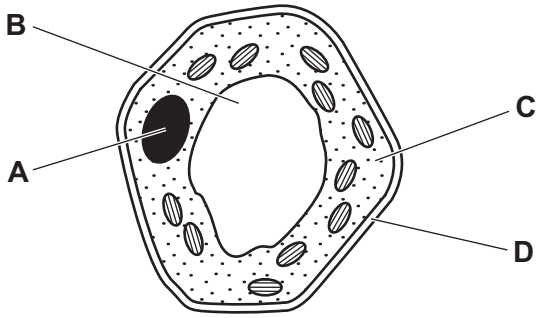
© UCLES 2020

4 The diagram shows a plant cell.

View solution

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?

View solution

A cells

B organs

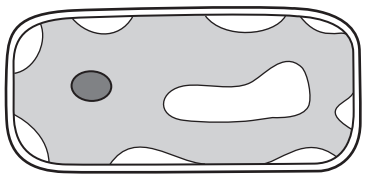
C organ systems

D tissues

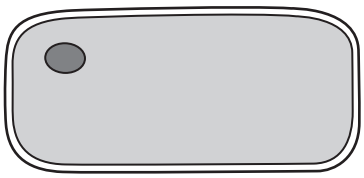
6 Which diagram shows the appearance of a plant cell several minutes after it has been placed in a concentrated solution of sugar?

View solution

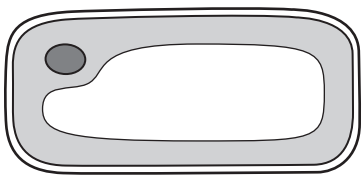
A



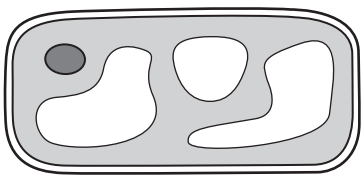
B



C



D



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

View solution

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

View solution

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

A Benedict's solution

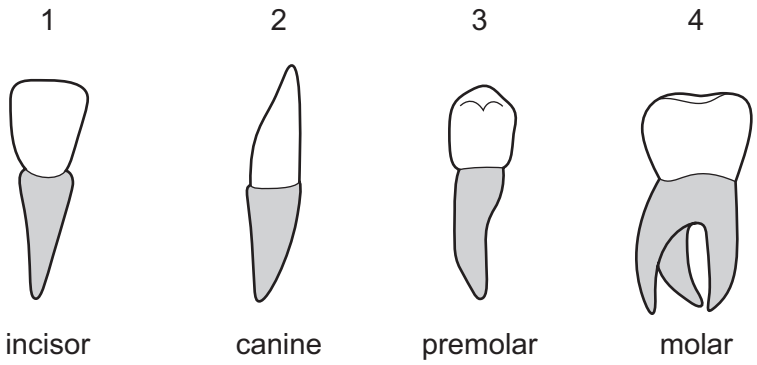
B biuret solution

C ethanol

D iodine solution

View solution

9 The diagram shows the four types of human tooth.



Which teeth are used for grinding food?

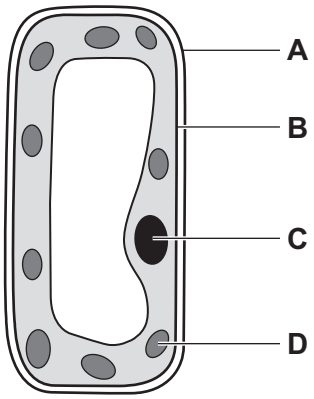
A 1 and 2 **B** 2 and 3 **C** 3 and 4 **D** 4 and 1

© UCLES 2020

10 The diagram shows a plant cell.

View solution

In which part of the cell does photosynthesis occur?



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

View solution

A fat

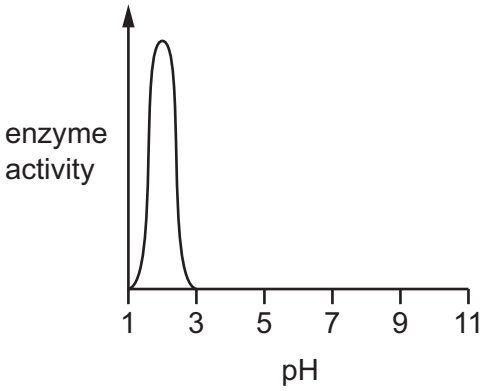
B fibre

C minerals

D vitamins

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

View solution



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

A large intestine

B mouth

C small intestine

D stomach

© UCLES 2020

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

View solution

A cortex

B epidermis

C mesophyll

D xylem

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

View solution

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?

View solution

A coronary artery

B pulmonary artery

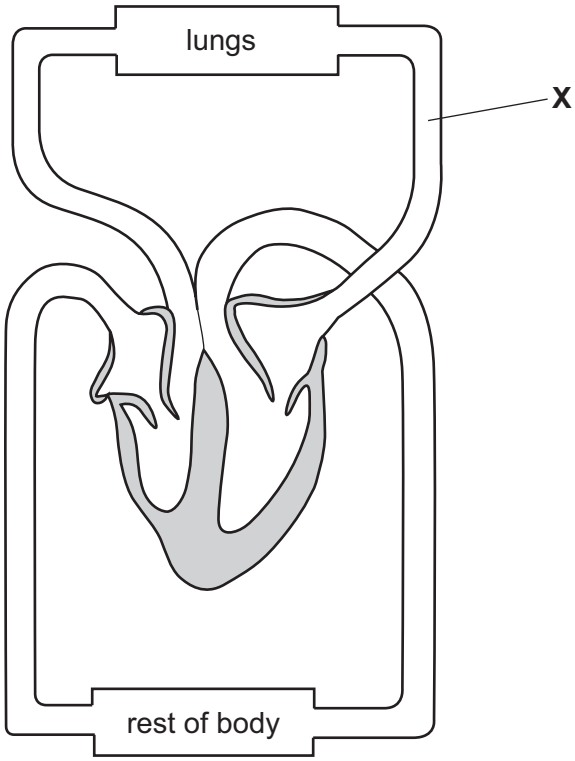
C renal vein

D vena cava

© UCLES 2020

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

View solution



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?

View solution

A nose hairs

B skin

C stomach acid

D white blood cells

18 What is the site of gas exchange in humans?

View solution

A nose

B alveoli

C bronchus

D trachea

© UCLES 2020

19 The substances listed are associated with aerobic respiration.

View solution

1 carbon dioxide

2 glucose

3 oxygen

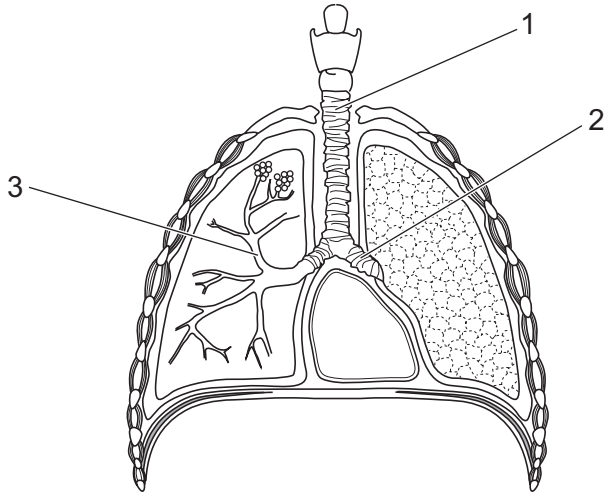
4 water

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.

View solution



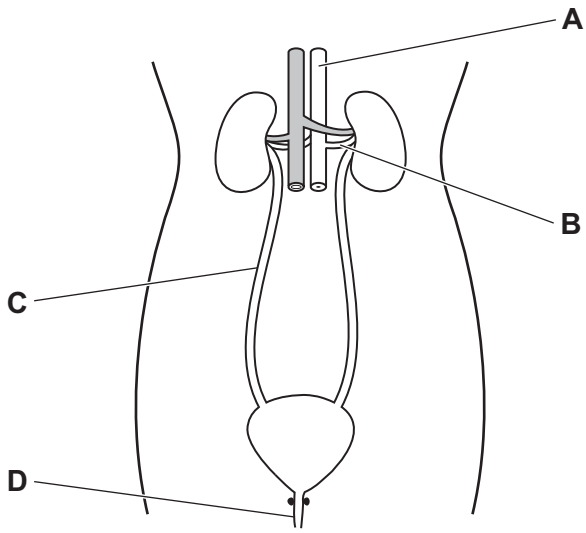
What are the labelled structures?

	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.

View solution

Which labelled structure is the ureter?



22 Which structure transfers information to the central nervous system?

View solution

A effector

B motor neurone

C relay neurone

D sensory neurone

23 Examples of responses to hormones are listed.

View solution

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

© UCLES 2020

24 Which part of the eye focuses light?

View solution

A cornea

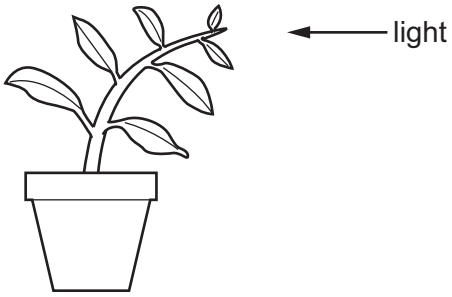
B iris

C lens

D retina

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

View solution



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?

View solution

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?

View solution

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

key

✓ = required

✗ = not required

28 Where do fertilisation and pollination occur in a flower?

View solution

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

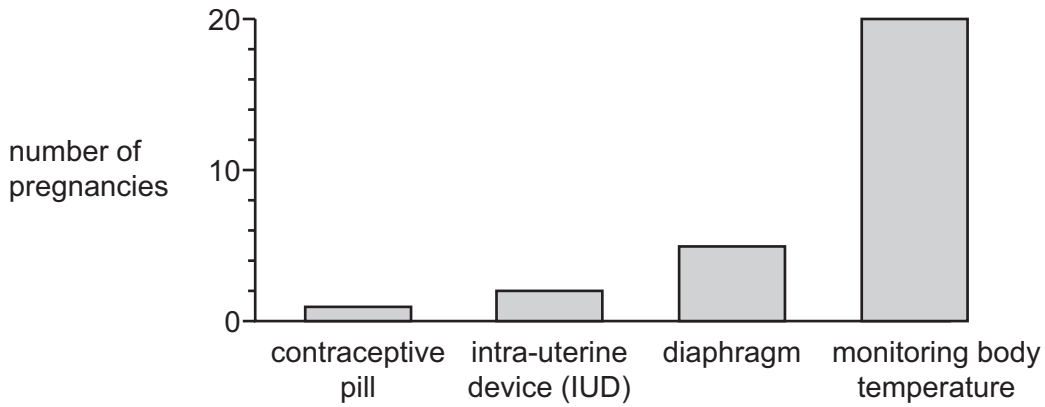
29 When do the following stages occur in a typical human menstrual cycle?

View solution

	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.

View solution



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

A barrier.

B chemical.

C natural.

D surgical.

31 The photograph shows a tiger.

View solution



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?

View solution

A Females have an X chromosome and a Y chromosome.

B Females have two Y chromosomes.

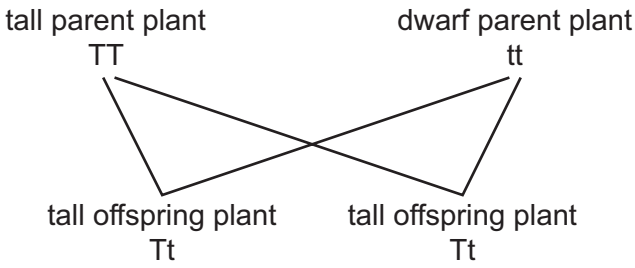
C Males and females have at least one X chromosome.

D Males and females have at least one Y chromosome.

© UCLES 2020

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

View solution



Which plants have a heterozygous genotype?

A both parent plants

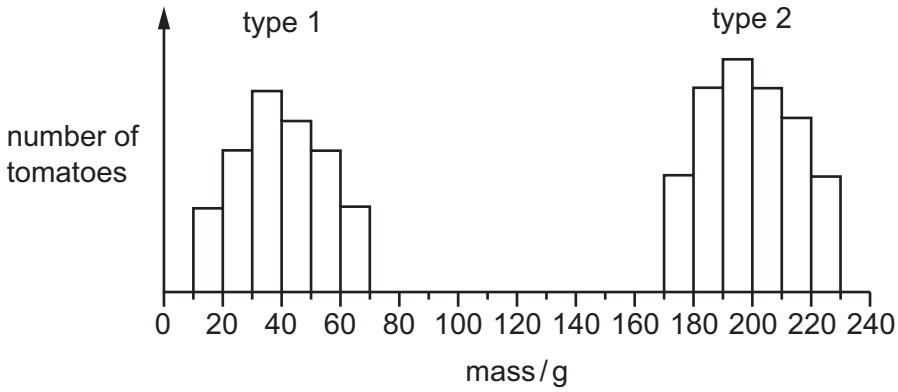
B dwarf parent plant only

C both offspring plants

D tall parent plant only

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

View solution



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?

View solution

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

© UCLES 2020

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

View solution

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?

View solution

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.

View solution

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.

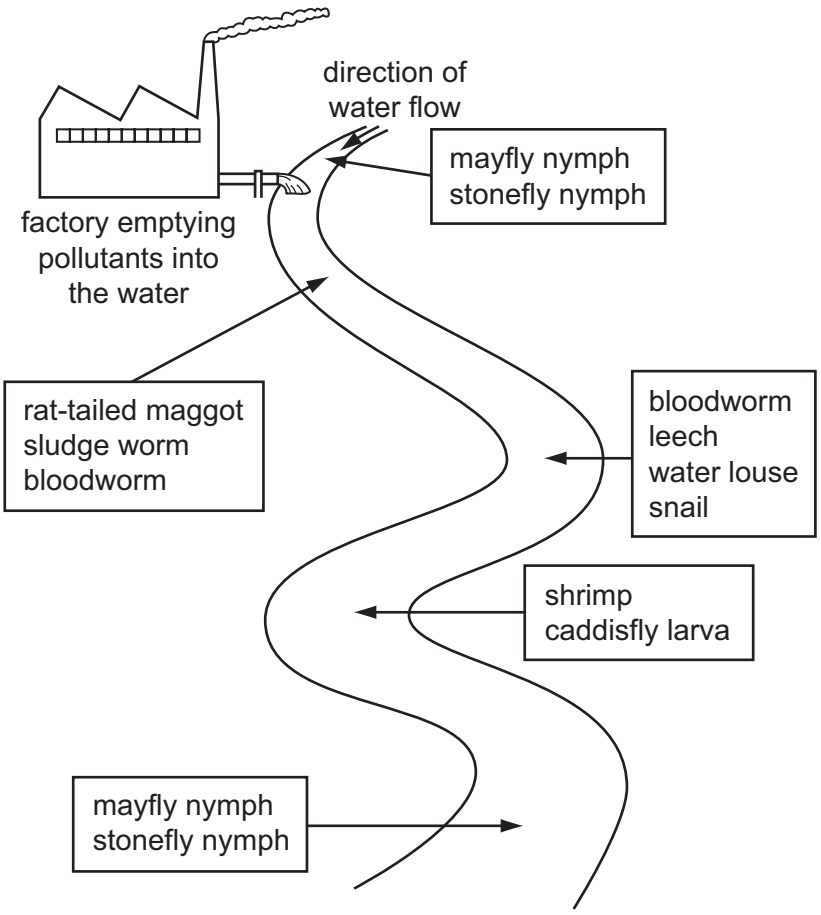
C The crop plant is unharmed and produces a higher yield.

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

© UCLES 2020

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

View solution



Which animal lives in the least polluted water?

A bloodworm

B caddisfly larva

C leech

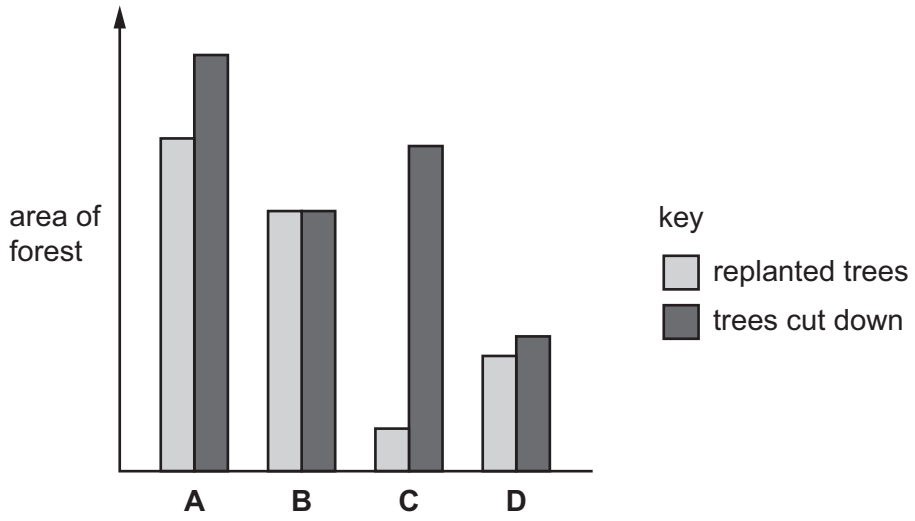
D stonefly nymph

© UCLES 2020

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.

View solution

Which area of forest was used most sustainably?



Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.

© UCLES 2020