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.

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

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

View solution

**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?

View solution

**A** a genus

**B** a kingdom

**C** a species

**D** an organ system

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

View solution

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.

View solution

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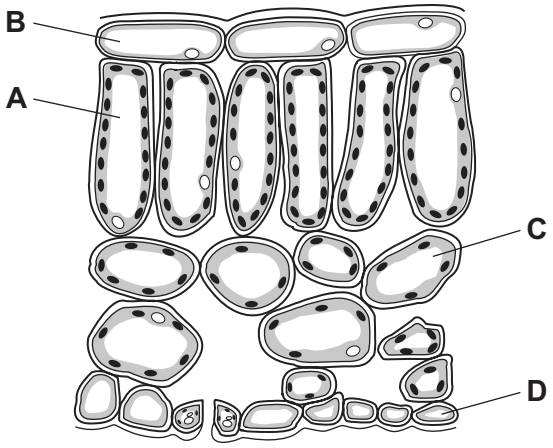
**5** The diagram shows a cross-section of part of a leaf.

View solution

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.

View solution

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.

View solution

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.

View solution

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 |

View solution

**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

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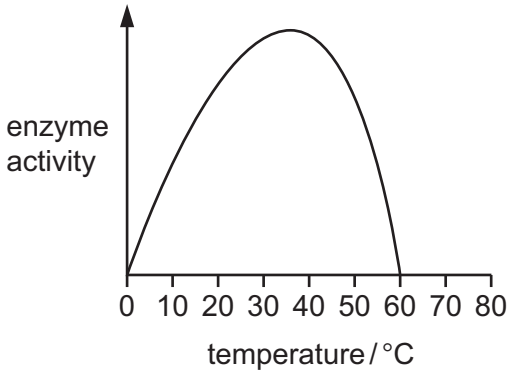
**11** The graph shows the effect of temperature on the activity of an enzyme.

View solution




At which temperature is the enzyme most active?

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

View solution

**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

View solution

**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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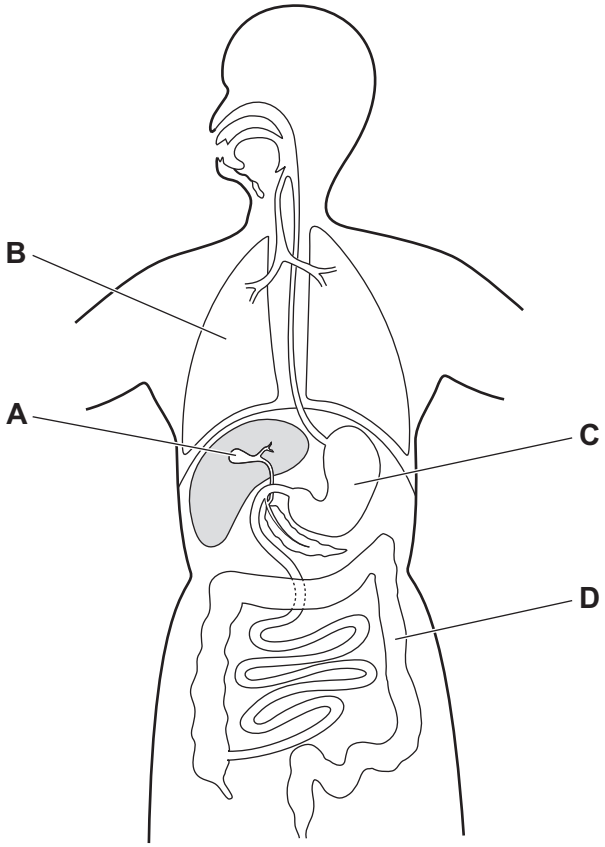
**14** Which organ secretes hydrochloric acid?

View solution




**15** Which statements correctly describe the process of dental decay?

View solution

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.

View solution

Which substance in saliva causes this change?

**A** amylase

**B** hydrochloric acid

**C** lipase

**D** protease

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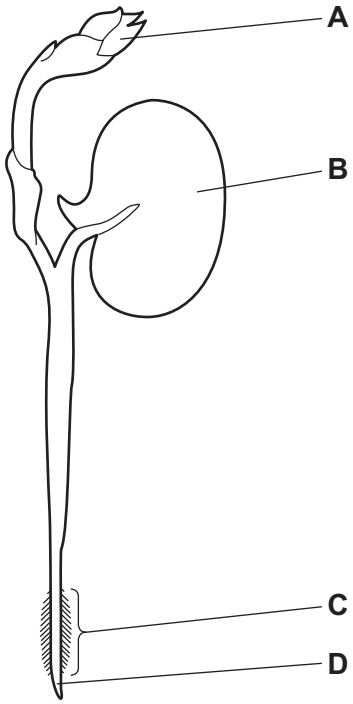
**17** The diagram shows a bean seedling soon after it has germinated.

View solution

Where is most water absorbed?




**18** Which process occurs during transpiration?

View solution

**A** evaporation of water from the xylem

**B** loss of water by osmosis from the guard cells

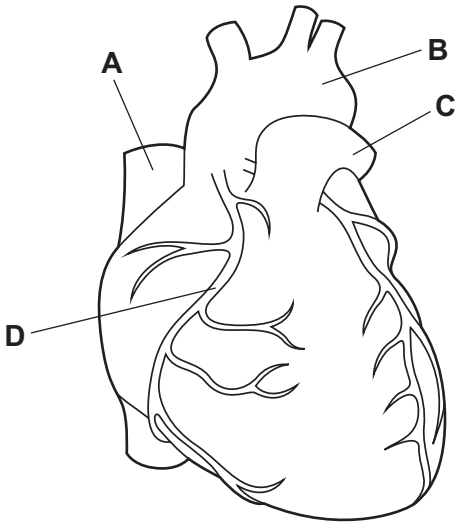
**C** movement of water vapour through the spongy mesophyll by active transport

**D** movement of water vapour through the stomata by diffusion

**19** The diagram shows the outside of a human heart.

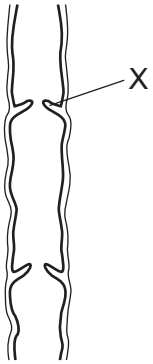
View solution

Which structure is a coronary artery?



**20** The diagram shows a section of a human vein.

View solution




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.

View solution

Which word describes *Campylobacter*?

**A** antibody

**B** disease

**C** pathogen

**D** symptom

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

View solution

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

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

View solution

| | 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?

View solution

**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?

View solution

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?

View solution

**A** effector → neurones → receptor

**B** receptor → neurones → effector

**C** neurones → effector → receptor

**D** receptor → effector → neurones

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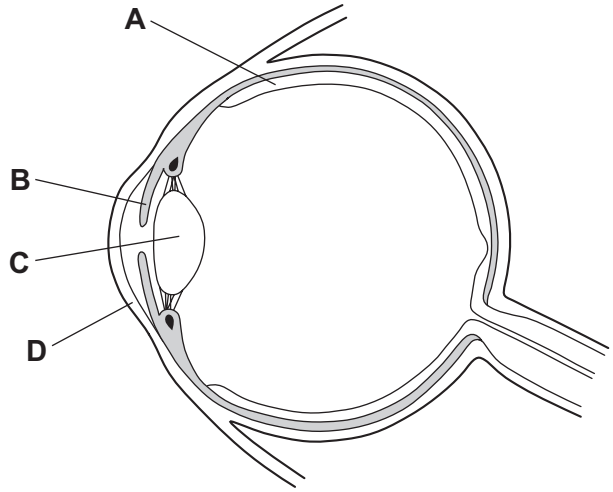
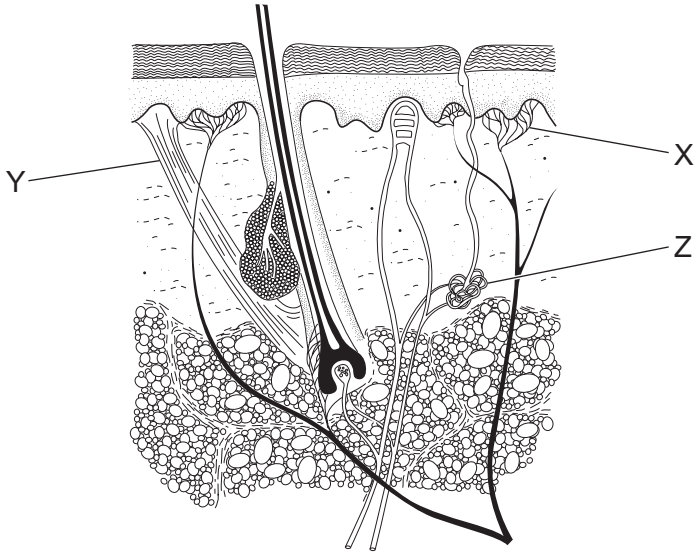
**27** Which structure can reduce how much light enters the eye?

View solution




**28** The diagram shows a section through human skin.

View solution




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.

View solution

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?

View solution

**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.

View solution

Which sample would germinate?

| | water | oxygen |
|---|---|---|
| **A** | present | absent |
| **B** | absent | absent |
| **C** | present | present |
| **D** | absent | present |

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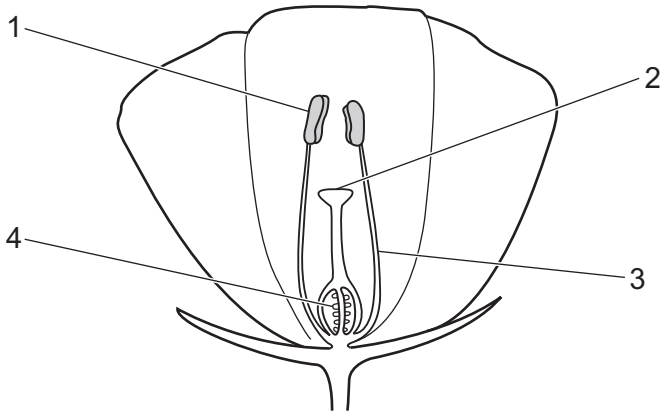
**32** The diagram shows a cross-section of a flower.

View solution




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?

View solution

**A** contraceptive pill

**B** diaphragm

**C** monitoring cervical mucus

**D** vasectomy

**34** Which row shows the results of meiosis?

View solution

| | 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?

View solution

**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?

View solution

**A** excess resources for the population

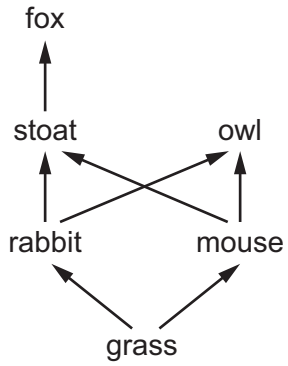
**B** no variation within a population

**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.

View solution




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?

View solution

**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.

View solution

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

**A** amylase

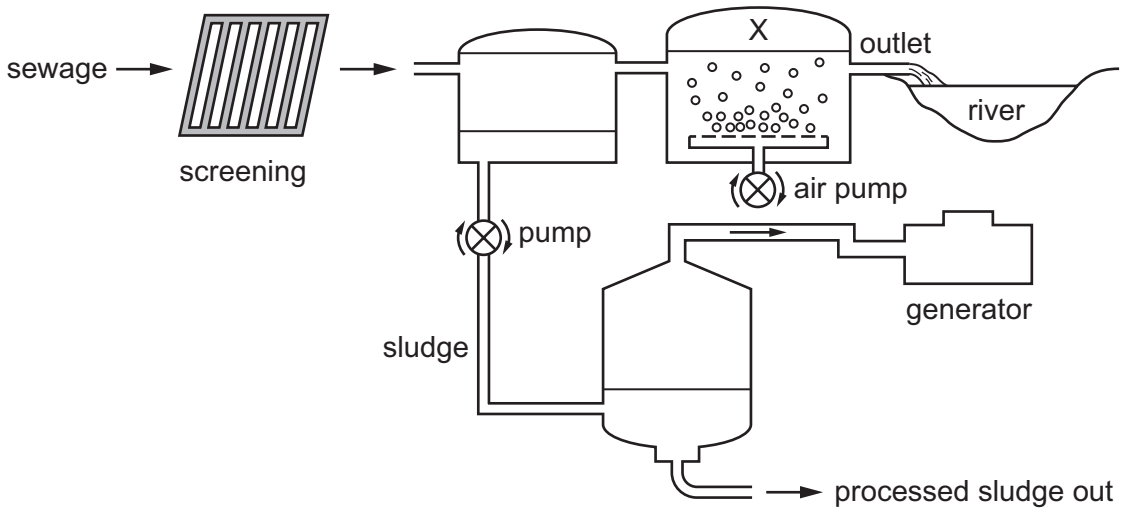
**B** lipase

**C** pectinase

**D** protease

**40** The diagram shows a sewage treatment process.

View solution




What is structure X?

**A** aeration tank

**B** anaerobic tank

**C** settlement tank

**D** storage tank

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