Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/11**

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.

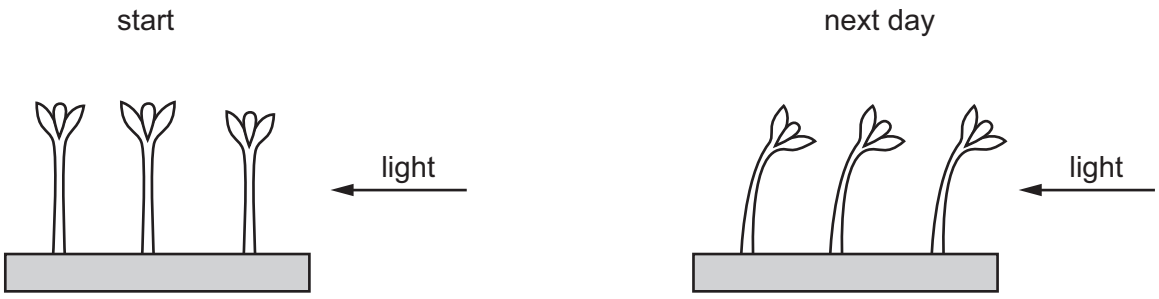
INFORMATION

- 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 An animal can swim, has a backbone and produces milk.

To which group does it belong?

A amphibians

B fish

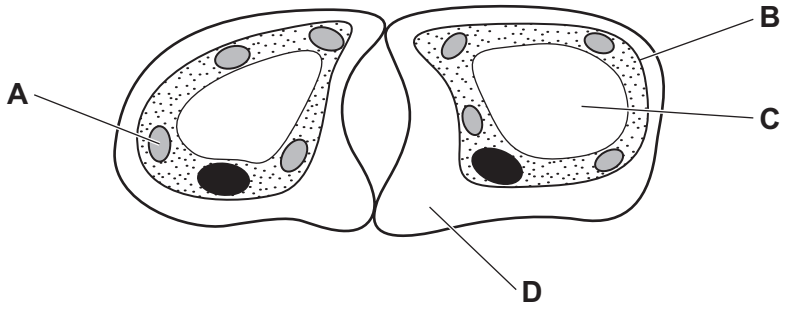
C mammals

D reptiles

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4 The diagram shows two guard cells.

Which label shows the cell wall?



5 What is the correct order to describe an **increasing** level of organisation?

A cell → organ → tissue → organ system

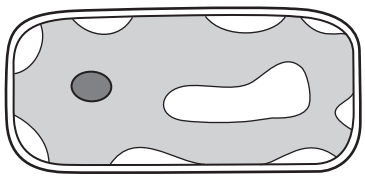
B tissue → cell → organ → organ system

C organ → tissue → cell → organ system

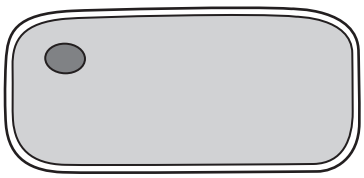
D cell → tissue → organ → organ system

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

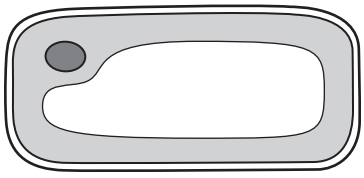
A



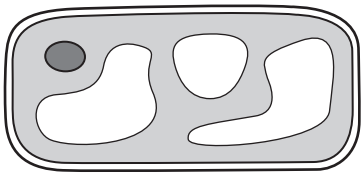
B



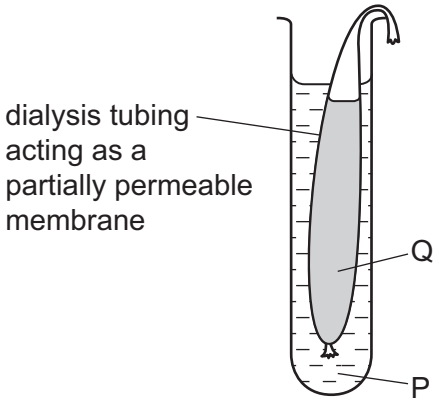
C



D



7 The apparatus shown is used to demonstrate osmosis.



The mass of the dialysis tubing and contents was 11.2 g at the start of the demonstration and 9.4 g at the end.

Which solutions would cause this change in mass?

	solution P	solution Q
A	5% salt solution	10% salt solution
B	10% salt solution	5% salt solution
C	water	5% salt solution
D	water	10% salt 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

9 What is the definition of an enzyme?

A a carbohydrate that acts as a catalyst

B a DNA molecule that acts as a catalyst

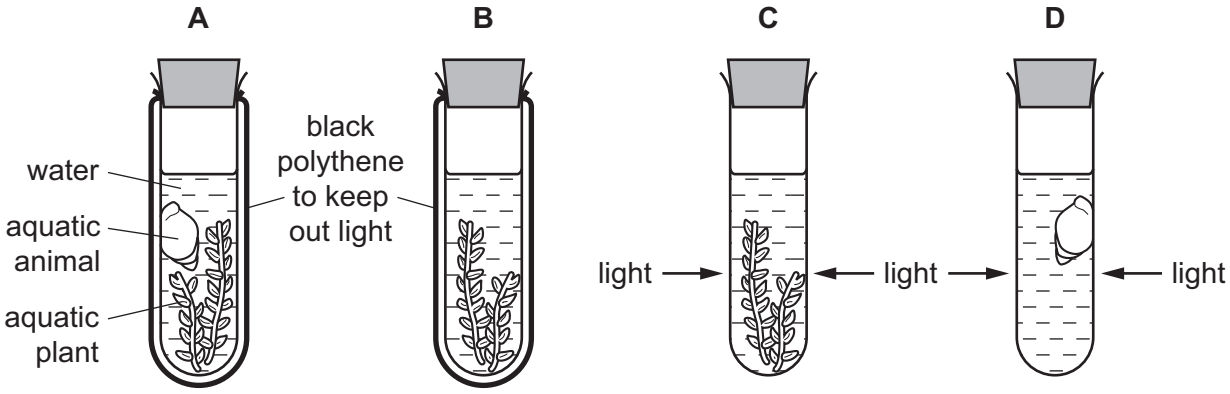
C a fat that acts as a catalyst

D a protein that acts as a catalyst

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10 Four test-tubes are set up as shown.

Which test-tube contains the least carbon dioxide after one hour?



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

A fat

B fibre

C minerals

D vitamins

12 The activity of amylase is measured in four parts of the alimentary canal.

Which two parts have the most amylase activity?

A colon and duodenum

B colon and stomach

C mouth and duodenum

D stomach and mouth

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

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[Turn over

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?

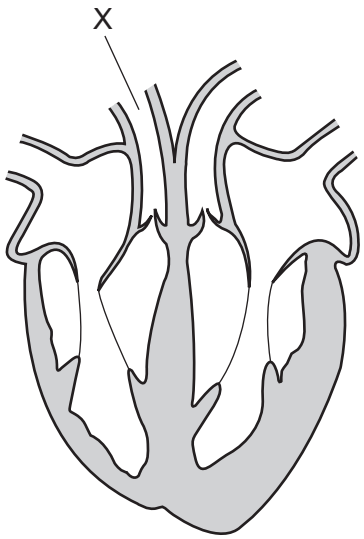
A coronary artery

B pulmonary artery

C renal vein

D vena cava

16 The diagram shows a section through the heart and its blood vessels.



Which row gives the vessel name and the direction of blood flow in vessel X?

	vessel name	direction of blood flow
A	aorta	towards the lungs
B	pulmonary artery	towards the lungs
C	pulmonary artery	away from the lungs
D	vena cava	away from the lungs

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17 What is a chemical barrier to pathogens?

A nose hairs

B skin

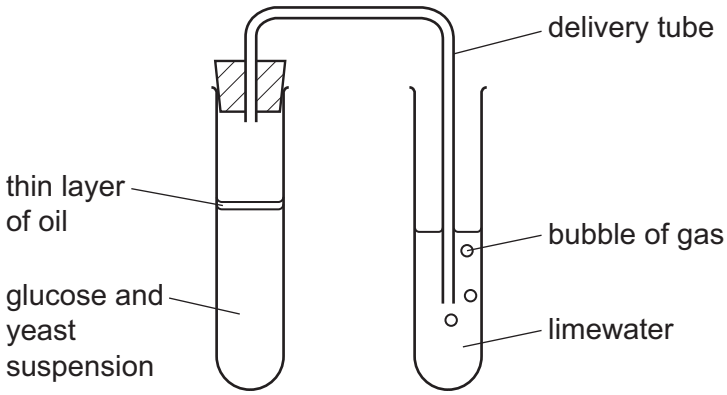
C stomach acid

D white blood cells

18 What is the approximate percentage of oxygen contained in the air breathed out of the lungs?

A 0% **B** 4% **C** 16% **D** 20%

19 The diagram shows an experiment to investigate the respiration of yeast. Oil prevents oxygen entering the glucose and yeast suspension.



If **no** oxygen is present in the glucose and yeast suspension, what will occur?

A Ethanol will be produced and the limewater will stay clear.

B Ethanol will be produced and the limewater will go cloudy.

C Lactic acid will be produced and the limewater will stay clear.

D Lactic acid will be produced and the limewater will go cloudy.

20 What happens during respiration in germinating seeds?

A Seed temperature decreases.

B Carbon dioxide is taken up by the seeds.

C Glucose is used up by the seeds.

D Oxygen is given out by the seeds.

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21 Which row describes the urine produced by a person who is exercising on a hot day?

	concentration of urine	volume of urine
A	concentrated	large
B	concentrated	small
C	dilute	large
D	dilute	small

22 What is the function of the optic nerve?

A to carry impulses from the brain to the retina

B to carry impulses from the retina to the brain

C to carry light from the brain to the retina

D to carry light from the retina to the brain

23 What causes the development of female secondary sexual characteristics?

A adrenaline production

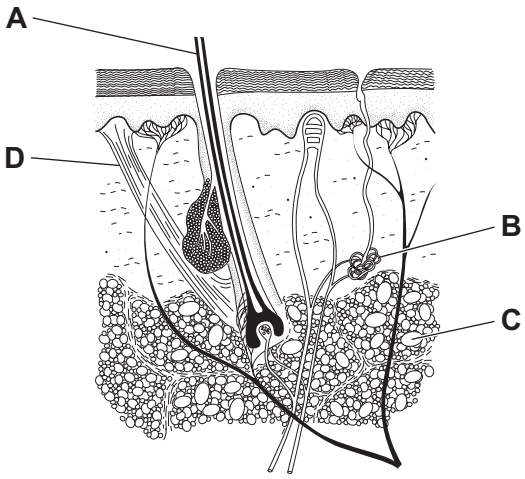
B menstrual cycle starting

C oestrogen production

D ovulation occurring

24 The diagram shows a cross-section of the skin.

Which part produces a substance which cools the skin when it evaporates?



25 Gravitropism and phototropism are names given to specific plant growth responses.

How do shoots and roots normally respond?

	direction of growth of shoots		direction of growth of roots	
	light	gravity	light	gravity
A	towards	away	away	towards
B	away	towards	towards	away
C	towards	away	towards	away
D	away	towards	away	towards

26 Which type of infection could be treated successfully with antibiotics?

	infection caused by		
	bacteria	resistant bacteria	viruses
A	✓	✓	✗
B	✓	✗	✗
C	✗	✓	✓
D	✗	✗	✓

key

✓ = yes

✗ = no

27 What takes place during fertilisation?

A One gamete produces one zygote.

B One gamete produces two zygotes.

C Two gametes produce one zygote.

D Two gametes produce two zygotes.

28 What is the transfer of pollen from an anther to a stigma called?

A fertilisation

B respiration

C meiosis

D pollination

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[Turn over

29 What happens to the uterus lining during menstruation?

A breaks down

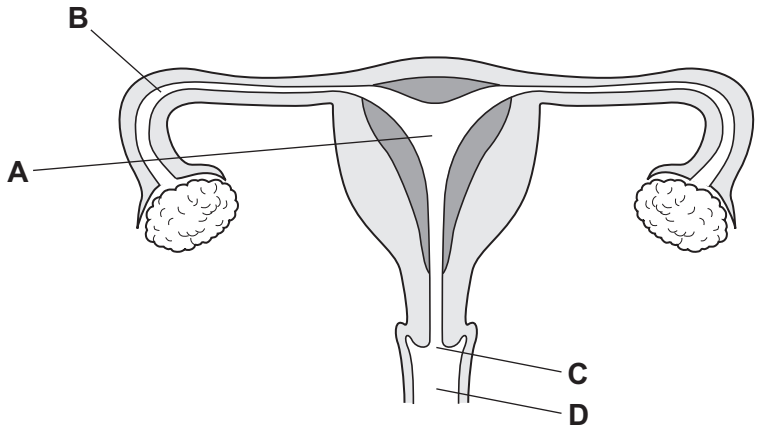
B new blood vessel growth

C implantation of embryo

D repair and thickening

30 The diagram of the female reproductive system shows where different methods of birth control can be used.

Where would an IUD be placed?



31 What is defined as a length of DNA that codes for a protein?

A amino acid

B chromosome

C gene

D nucleus

32 When damaged tissues are repaired cells undergo division by

A meiosis to produce genetically identical cells.

B meiosis to produce genetically different cells.

C mitosis to produce genetically identical cells.

D mitosis to produce genetically different cells.

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33 Pea plants produce either yellow or green seeds. Yellow (Y) is dominant to green (y).

What are the most likely phenotypes of the offspring of a cross between YY and Yy plants?

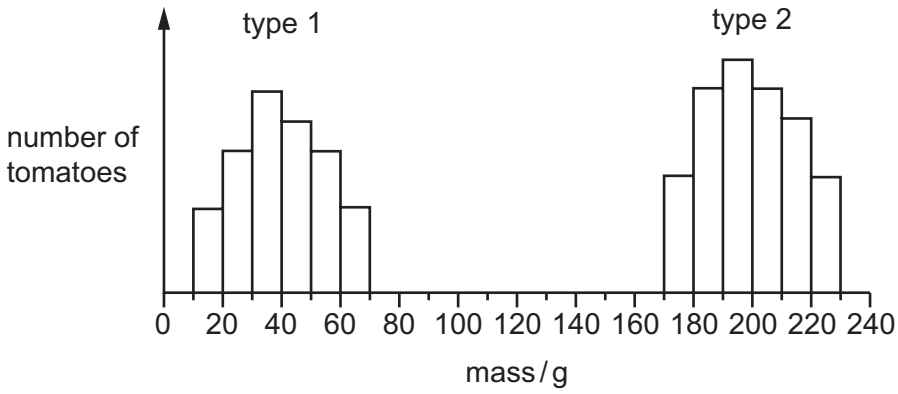
A 50% yellow and 50% green

B 75% yellow and 25% green

C 100% yellow

D 100% green

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 The diagram shows a simple food chain.

grass → gazelle → lion

The arrows show the energy flow through the food chain.

Where does the grass obtain its energy?

A oxygen from air

B water

C minerals in soil

D the Sun

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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.

39 Which is an example of an undesirable effect of deforestation?

A decreased carbon dioxide concentration in the atmosphere

B decreased soil erosion

C increased flooding

D the variety of organisms is maintained

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40 Wheat is often grown in large areas as a monoculture.

What is a negative environmental impact of this method of farming?

A The variety of species in the area is reduced.

B Fewer types of pesticide are needed.

C Larger harvests can be produced.

D Specialist machinery can be used.

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