CAMBRIDGE
International Education

Cambridge IGCSE™

CO-ORDINATED SCIENCES **0654/13**

Paper 1 Multiple Choice (Core) **May/June 2026**

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 or tape.
- Do **not** write on any bar codes.
- You may use a calculator.
- Take the weight of 1.0 kg to be 9.8 N (acceleration of free fall = 9.8 m / s^2).

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.
- The Periodic Table is printed in the question paper.

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

[Turn over

1 Which type of molecules make up enzymes?

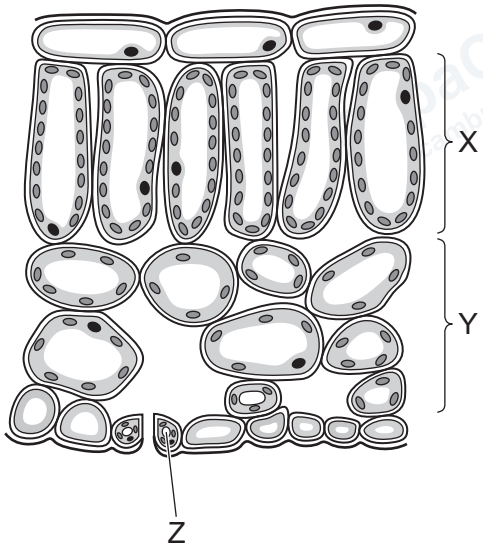
A fats

B carbohydrates

C minerals

D proteins

2 The diagram shows a cross-section of a leaf.

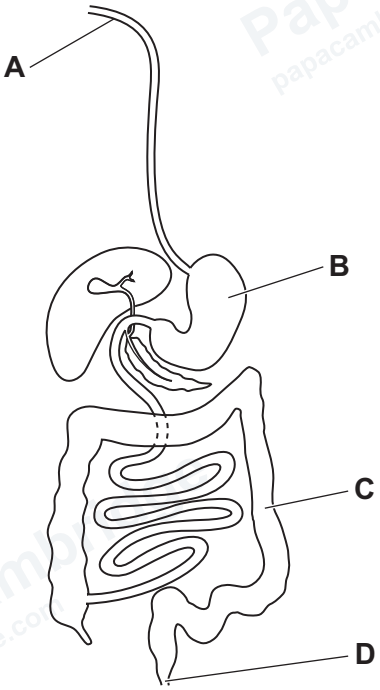


Which row identifies the structures in the leaf?

	X	Y	Z
A	palisade mesophyll	spongy mesophyll	stomata
B	spongy mesophyll	palisade mesophyll	stomata
C	palisade mesophyll	spongy mesophyll	guard cell
D	spongy mesophyll	palisade mesophyll	guard cell

3 The diagram shows the human digestive system.

Which letter shows where egestion occurs?



4 Which substances are absorbed by root hair cells?

A mineral ions and starch

B mineral ions and water

C starch and sugars

D water and sugars

5 The diagram shows some components of blood.

X Y Z

Which row identifies two of these components?

	red blood cell	white blood cell
A	X	Y
B	Y	X
C	X	Z
D	Z	Y

6 A person runs quickly up some stairs.

Which row shows the effect on their breathing?

	depth of breathing	rate of breathing
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

7 What happens when adrenaline is released into the blood?

A breathing rate increases

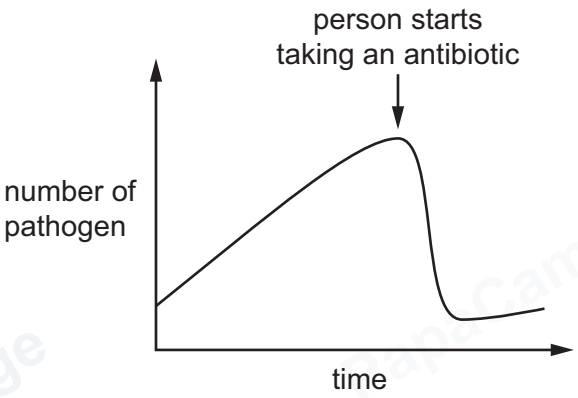
B pupil diameter decreases

C ovary releases egg cell

D heart rate decreases

8 A person is infected with a pathogen.

The graph shows the number of the pathogen in the person's blood before and after the person starts taking an antibiotic.



Which statement describes the type of pathogen and the effect of the antibiotic on the pathogen?

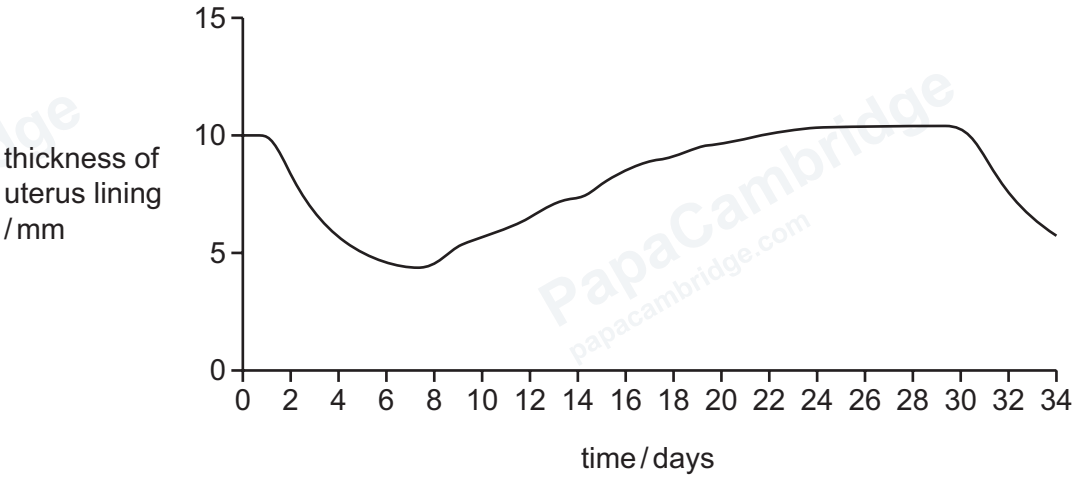
A The pathogen is a bacterium and none of the pathogen show resistance to the antibiotic.

B The pathogen is a bacterium and some of the pathogen show resistance to the antibiotic.

C The pathogen is a virus and none of the pathogen show resistance to the antibiotic.

D The pathogen is a virus and some of the pathogen show resistance to the antibiotic.

9 The graph shows the thickness of a woman's uterus lining.



What is the duration of this woman's menstrual cycle?

A 10 days **B** 26 days **C** 29 days **D** 34 days

10 The allele for red flowers is dominant to the allele for white flowers.

A homozygous red-flowering plant and a homozygous white-flowering plant are crossed.

What are the expected phenotypes of their offspring?

A 1 : 1 red to white

B 3 : 1 red to white

C all red

D all white

11 Selective breeding is used to improve crop plants.

What does selective breeding involve?

A artificial selection

B asexual reproduction

C immunodeficiency

D natural selection

12 Which organism is a secondary consumer in the food chain shown?

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

plant → herbivore → carnivore → carnivore

13 Which row shows undesirable effects of deforestation?

	flooding	biodiversity
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

14 Magnesium and chlorine react together to form magnesium chloride.

The particles in magnesium chloride are held together by .....1..... between .....2..... .

Which words complete gaps 1 and 2?

	1	2
A	electrostatic attraction	atoms
B	electrostatic attraction	ions
C	sharing of electrons	atoms
D	sharing of electrons	ions

15 What is the molecular formula of the compound sodium fluoride?

A NaF **B** NaFl **C** SF **D** SFl

16 Some changes involving sodium chloride are listed.

1 Sodium and chlorine are combined to form sodium chloride.

2 Solid sodium chloride is dissolved in water.

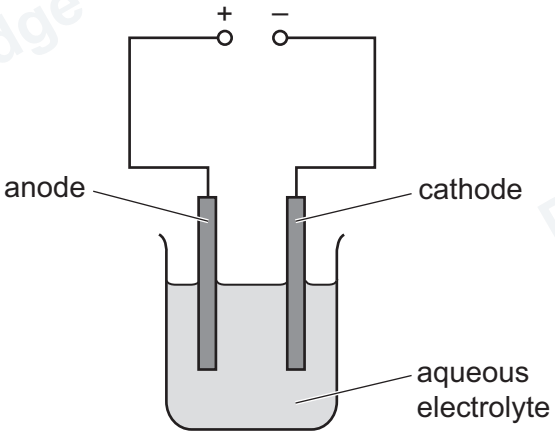
3 Aqueous sodium chloride decomposes when an electric current is passed through it.

4 Solid sodium chloride is heated until it turns to a liquid.

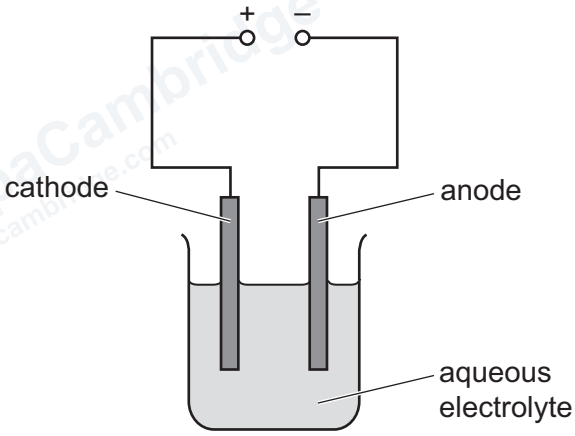
Which changes are chemical changes?

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

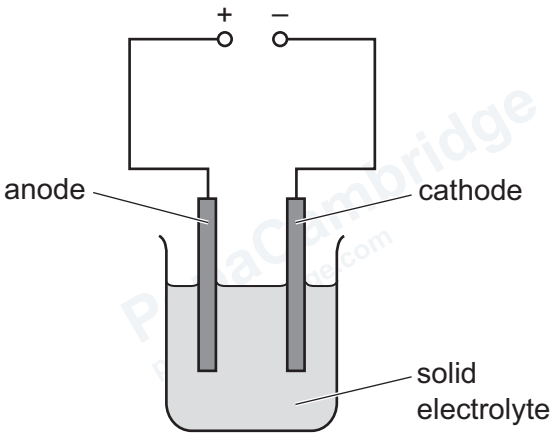
17 A student draws four diagrams, W, X, Y and Z.



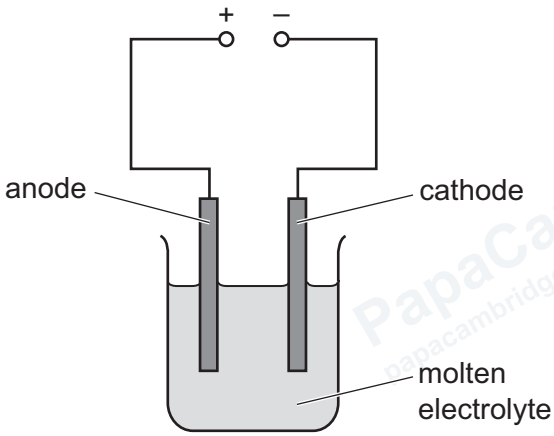
W



X



Y



Z

Which diagrams show a correct electrolytic cell?

A W and X **B** X and Y **C** Y and Z **D** W and Z

18 Which statement describes an endothermic reaction?

A An endothermic reaction transfers thermal energy to the surroundings leading to an increase in the temperature of the surroundings.

B An endothermic reaction transfers thermal energy to the surroundings leading to a decrease in the temperature of the surroundings.

C An endothermic reaction takes in thermal energy from the surroundings leading to an increase in the temperature of the surroundings.

D An endothermic reaction takes in thermal energy from the surroundings leading to a decrease in the temperature of the surroundings.

19 During a reaction, a gas is given off.

Which pieces of apparatus are essential to measure the rate of this reaction?

A balance and volumetric pipette

B beaker and stop-watch

C gas syringe and stop-watch

D pipette and stop-watch

20 Which row shows the colours observed when universal indicator is added to acidic, neutral and alkaline solutions?

	acidic solution	**neutral solution**	**alkaline solution**
A	red	yellow	blue
B	red	orange	yellow
C	yellow	green	purple
D	blue	green	red

21 Which statement about elements in Group I of the Periodic Table is correct?

A They are metals and get less reactive going down the group.

B They are metals and get more reactive going down the group.

C They are non-metals and get less reactive going down the group.

D They are non-metals and get more reactive going down the group.

22 What are properties of transition elements?

1 high melting point

2 form colourless compounds

3 high density

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

23 Which statements about rusting are correct?

1 Oxygen must be present for iron to rust.

2 Painting is a barrier method of rust prevention.

3 Barrier methods of rust prevention work by reacting with iron and making it less reactive.

4 Only water is required for iron to rust.

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

24 What happens in a blast furnace?

A Aluminium is extracted from bauxite.

B Aluminium is extracted from hematite.

C Iron is extracted from bauxite.

D Iron is extracted from hematite.

25 Which row shows why filtration and chlorination are used in the treatment of the domestic water supply?

	filtration	chlorination
A	removes bacteria	removes solid particles
B	removes bacteria	removes smells and tastes
C	removes solid particles	removes bacteria
D	removes solid particles	removes smells and tastes

26 What is produced during the complete combustion of ethanol?

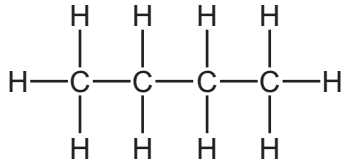
A carbon dioxide and water

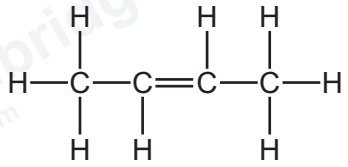
B carbon dioxide only

C carbon monoxide

D water only

27 The structures or names of four compounds are listed.

1 

2 

3 hexane

4 hexene

Which compounds will decolourise aqueous bromine?

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

28 A solid object is made from a material with density 0.60 g / cm^3.

The volume of the object is 4.0 cm^3.

What is the mass of the object?

A 0.15 g **B** 2.4 g **C** 6.7 g **D** 38 g

29 Four students lift books of different total weights through different vertical heights.

Which student does the most work?

	total weight of books / N	**vertical height / m**
A	30	0.50
B	20	0.50
C	30	1.0
D	20	1.0

30 The table gives the weight and total area of contact with the ground for each of four animals.

Which row shows the animal that exerts the **least** pressure on the ground?

	animal	weight / N	total area of contact / cm^2
A	beaver	270	220
B	cat	41	29
C	duck	16	72
D	mouse	0.19	0.12

31 The vacuum in a vacuum flask reduces the thermal energy transfer from the contents of the flask to the surroundings.

Which methods of energy transfer **cannot** occur in a vacuum?

A conduction and convection

B conduction only

C convection and radiation

D radiation only

32 A tank contains water.

A wave is produced and travels across the surface of the water.

Which feature of the wave is the maximum height of the wave above the initial level of water?

A the amplitude

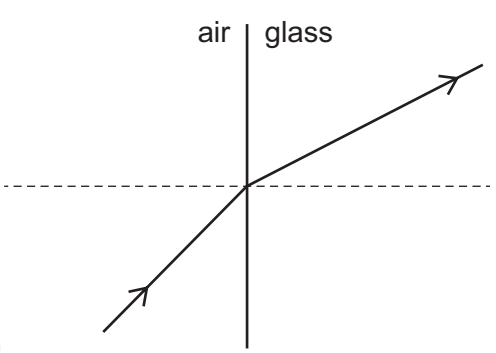
B the frequency

C the speed

D the wavelength

33 Which diagram shows the refraction of a light ray as it travels from air into glass?

A



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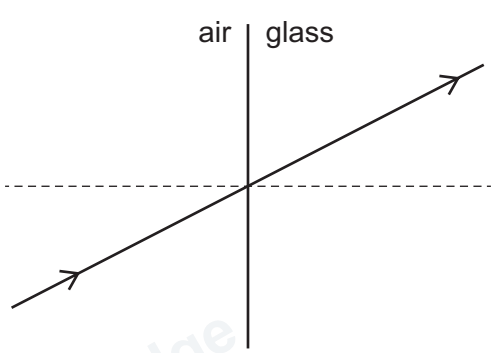
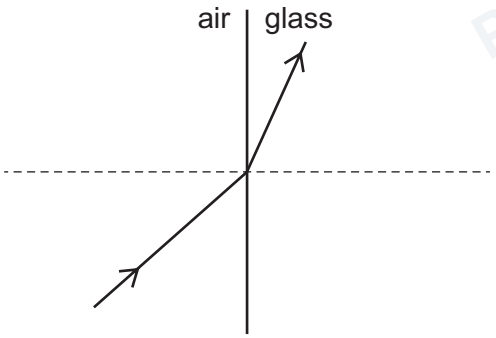
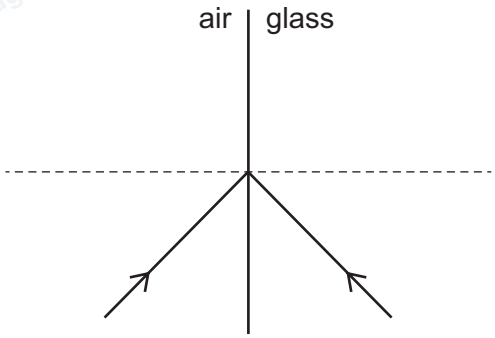


C



D



34 When a beam of white light passes into a glass prism, the white light splits up into seven colours.

Which term describes the splitting up of white light into different colours?

A absorption

B dispersion

C emission

D reflection

35 Which statement about permanent magnets is correct?

A The magnetic field of a permanent magnet can be switched off.

B Permanent magnets are made of soft iron.

C Permanent magnets attract all metals.

D Permanent magnets remain magnetised when removed from an applied magnetic field.

36 A rod gains negative charge as it is rubbed with a cloth.

What happens to the cloth in this process?

A It gains electrons.

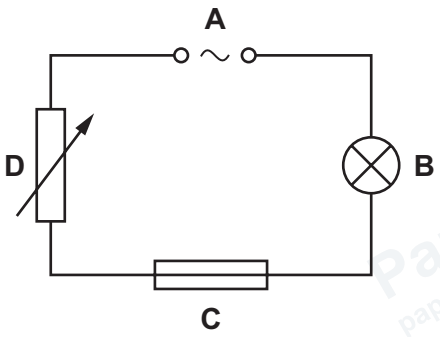
B It loses electrons.

C It gains protons.

D It loses protons.

37 The diagram shows four components in a circuit.

Which component is only used to protect the circuit?



38 Which nuclide contains the most neutrons?

A $^{239}_{95}\text{Am}$ **B** $^{234}_{91}\text{Pa}$ **C** $^{239}_{94}\text{Pu}$ **D** $^{238}_{92}\text{U}$

39 Scientists use a radioactive source that emits γ-radiation.

What is a suitable safety precaution?

A Reduce the temperature of the radioactive source.

B Use aluminium foil to reflect the γ-radiation away from the scientists.

C Use a paper screen to absorb the γ-radiation.

D Use the source for the minimum time needed.

40 Which list gives the planets in order of increasing distance from the Sun?

A Earth, Mars, Venus

B Mars, Earth, Venus

C Mars, Venus, Earth

D Venus, Earth, Mars

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The Periodic Table of Elements

Group																	
I	II											III	IV	V	VI	VII	VIII
							1 H hydrogen 1										2 He helium 4
3 Li lithium 7	4 Be beryllium 9											5 B boron 11	6 C carbon 12	7 N nitrogen 14	8 O oxygen 16	9 F fluorine 19	10 Ne neon 20
11 Na sodium 23	12 Mg magnesium 24											13 Al aluminium 27	14 Si silicon 28	15 P phosphorus 31	16 S sulfur 32	17 Cl chlorine 35.5	18 Ar argon 40
19 K potassium 39	20 Ca calcium 40	21 Sc scandium 45	22 Ti titanium 48	23 V vanadium 51	24 Cr chromium 52	25 Mn manganese 55	26 Fe iron 56	27 Co cobalt 59	28 Ni nickel 59	29 Cu copper 64	30 Zn zinc 65	31 Ga gallium 70	32 Ge germanium 73	33 As arsenic 75	34 Se selenium 79	35 Br bromine 80	36 Kr krypton 84
37 Rb rubidium 85	38 Sr strontium 88	39 Y yttrium 89	40 Zr zirconium 91	41 Nb niobium 93	42 Mo molybdenum 96	43 Tc technetium –	44 Ru ruthenium 101	45 Rh rhodium 103	46 Pd palladium 106	47 Ag silver 108	48 Cd cadmium 112	49 In indium 115	50 Sn tin 119	51 Sb antimony 122	52 Te tellurium 128	53 I iodine 127	54 Xe xenon 131
55 Cs caesium 133	56 Ba barium 137	57–71 lanthanoids	72 Hf hafnium 178	73 Ta tantalum 181	74 W tungsten 184	75 Re rhenium 186	76 Os osmium 190	77 Ir iridium 192	78 Pt platinum 195	79 Au gold 197	80 Hg mercury 201	81 Tl thallium 204	82 Pb lead 207	83 Bi bismuth 209	84 Po polonium –	85 At astatine –	86 Rn radon –
87 Fr francium –	88 Ra radium –	89–103 actinoids	104 Rf rutherfordium –	105 Db dubnium –	106 Sg seaborgium –	107 Bh bohrium –	108 Hs hassium –	109 Mt meitnerium –	110 Ds darmstadtium –	111 Rg roentgenium –	112 Cn copernicium –	113 Nh nihonium –	114 Fl flerovium –	115 Mc moscovium –	116 Lv livermorium –	117 Ts tennessine –	118 Og oganesson –

Key

atomic number
atomic symbol
name
relative atomic mass

lanthanoids	57 La lanthanum 139	58 Ce cerium 140	59 Pr praseodymium 141	60 Nd neodymium 144	61 Pm promethium –	62 Sm samarium 150	63 Eu europium 152	64 Gd gadolinium 157	65 Tb terbium 159	66 Dy dysprosium 163	67 Ho holmium 165	68 Er erbium 167	69 Tm thulium 169	70 Yb ytterbium 173	71 Lu lutetium 175
actinoids	89 Ac actinium –	90 Th thorium 232	91 Pa protactinium 231	92 U uranium 238	93 Np neptunium –	94 Pu plutonium –	95 Am americium –	96 Cm curium –	97 Bk berkelium –	98 Cf californium –	99 Es einsteinium –	100 Fm fermium –	101 Md mendelevium –	102 No nobelium –	103 Lr lawrencium –

The volume of one mole of any gas is 24 dm^3 at room temperature and pressure (r.t.p.).