CAMBRIDGE
International Education

Cambridge IGCSE™

CO-ORDINATED SCIENCES **0654/22**

Paper 2 Multiple Choice (Extended) **February/March 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.

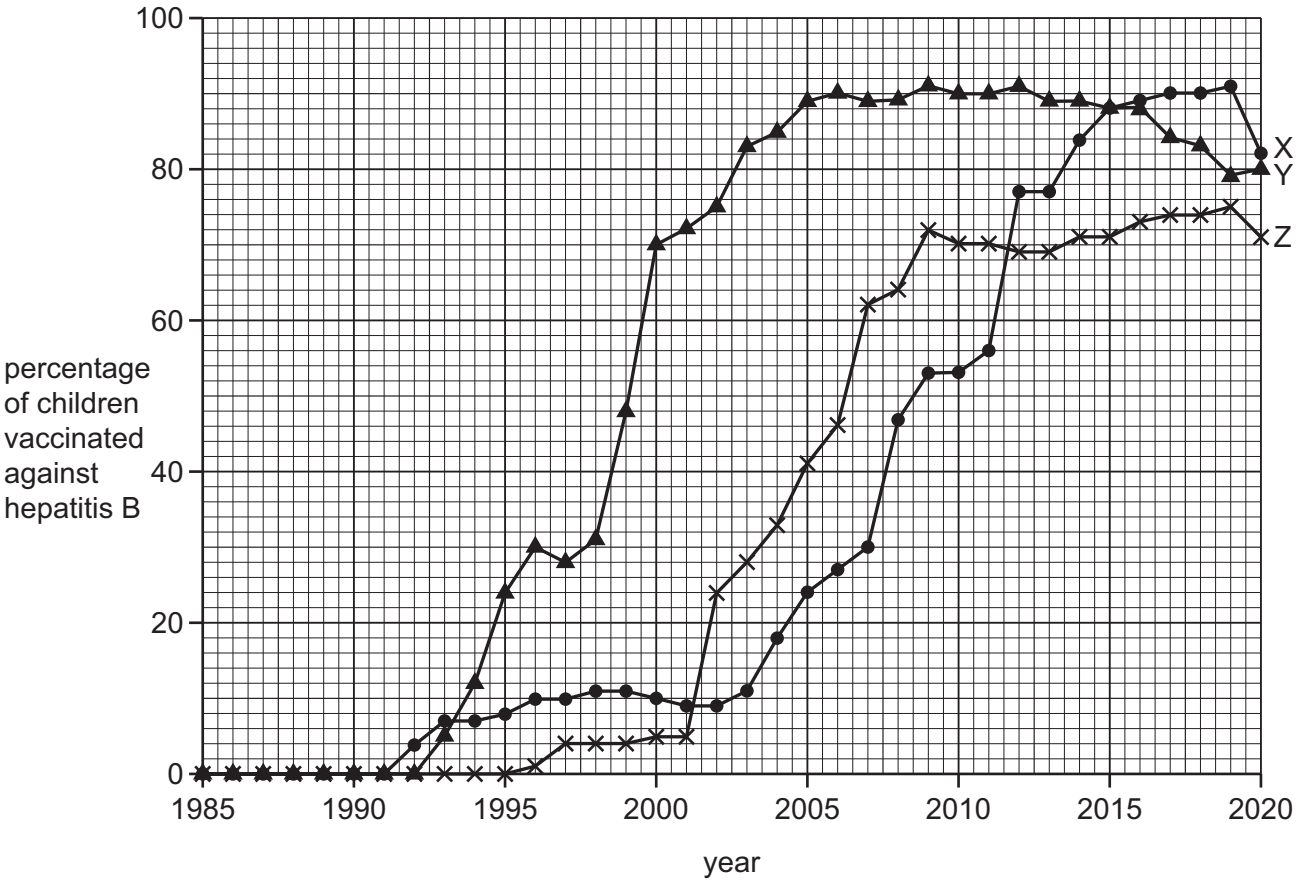
This document has **16** pages.

© Cambridge University Press & Assessment 2026

1 Which row about characteristics of living things is correct?

	name of process	definition of process
A	excretion	the ability to detect and respond to changes in the environment
B	nutrition	the removal of excess substances and toxic materials
C	reproduction	the taking in of materials for energy, growth and development
D	respiration	the breakdown of substances to release energy

2 The graph shows the percentage of children vaccinated against hepatitis B in three regions, X, Y and Z, from 1985 to 2020.



What is a correct conclusion from the graph?

A In 2000, the percentage of children vaccinated against hepatitis B was seven times greater in region Y than region Z.

B In 2015, the percentage of children vaccinated against hepatitis B was the same in regions X and Y.

C The percentage of children vaccinated against hepatitis B increases every year in region X.

D 70% of children were vaccinated against hepatitis B in region Y in 2010.

© Cambridge University Press & Assessment 2026

3 What is the correct pathway for air during inspiration?

A alveoli → bronchi → bronchiole → trachea → larynx

B alveoli → bronchiole → bronchi → trachea → larynx

C larynx → trachea → bronchi → bronchiole → alveoli

D larynx → trachea → bronchiole → bronchi → alveoli

4 A student writes down an incorrect symbol equation for aerobic respiration.

$$6C_6H_{12}O_6 + 6O_2 \rightarrow 6H_2O + 6CO_2$$

Which error has the student made in the equation?

A Oxygen is a product **not** a reactant.

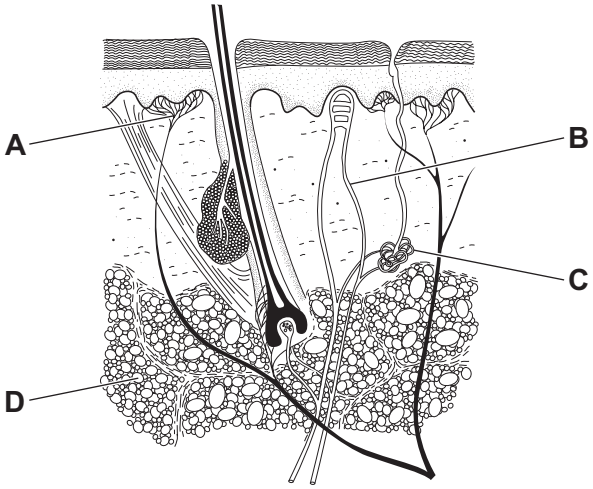
B Products are always written as $6CO_2 + 6H_2O$.

C The formula for glucose is $C_6H_6O_6$.

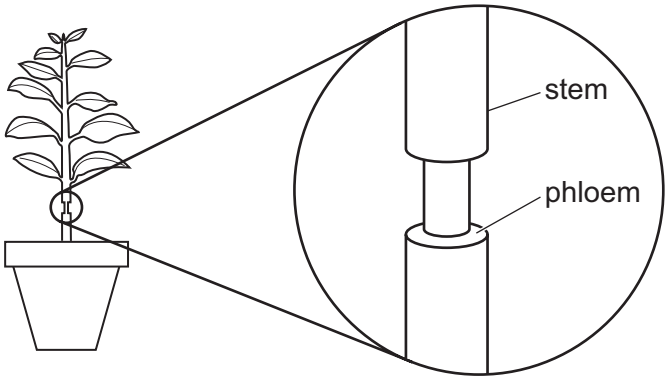
D The equation is **not** balanced.

5 The diagram shows a section through the skin and associated structures.

Which letter indicates the sweat gland?



6 The diagram shows the stem of a plant with its outer tissue and phloem removed.



Which statements about transport in this plant are correct?

1 Sucrose can pass to the roots.

2 Dissolved mineral ions and water **cannot** pass to the leaves.

3 Sucrose **cannot** pass to the roots.

4 Dissolved mineral ions and water can pass to the leaves.

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

7 A plant species has yellow or white flowers. The allele for yellow flowers is dominant to the allele for white flowers.

A heterozygous plant with yellow flowers is crossed with a plant with white flowers.

What is the expected percentage of yellow flowers and white flowers in the offspring?

A 100% yellow flowers and 0% white flowers

B 75% yellow flowers and 25% white flowers

C 50% yellow flowers and 50% white flowers

D 25% yellow flowers and 75% white flowers

8 How many micrometres are in one millimetre?

A 10 **B** 100 **C** 1000 **D** 10 000

© Cambridge University Press & Assessment 2026

9 Which statement is a description of water movement by osmosis through a partially permeable membrane?

A the net movement of water from a concentrated solution to a dilute solution

B the net movement of water from a higher water potential to a lower water potential

C the net movement of water from a higher solute concentration to a lower solute concentration

D the net movement of water from a lower water potential to a higher water potential

10 Which statements describe enzyme action?

1 The active site of the enzyme combines with the substrate to form an enzyme–substrate complex.

2 The active site of the substrate combines with the enzyme to form an enzyme–substrate complex.

3 The enzyme–substrate complex breaks apart to leave an enzyme and a product.

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

11 Which carbohydrate is used as an energy store in plants?

A cellulose

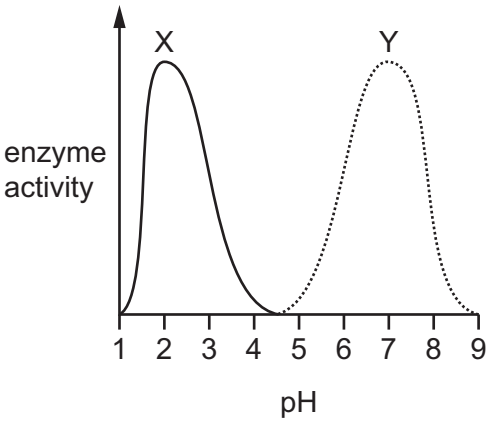
B glucose

C starch

D sucrose

© Cambridge University Press & Assessment 2026

12 The diagram shows the optimum pH for two different digestive enzymes, X and Y.



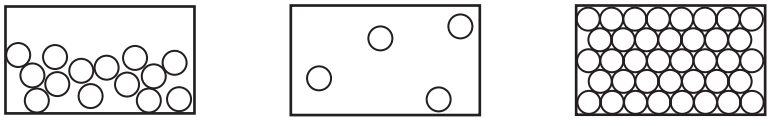
Which row identifies amylase and an organ where amylase is secreted?

	amylase	**organ where secreted**
A	Y	pancreas
B	Y	stomach
C	X	pancreas
D	X	stomach

13 Which row shows what happens to the heart valves when the atria contract and the ventricles relax?

	valves between the atria and the ventricles	**valves between the ventricles and the arteries**
A	open	close
B	close	open
C	open	open
D	close	close

14 The three states of matter are represented by diagrams R, S and T.



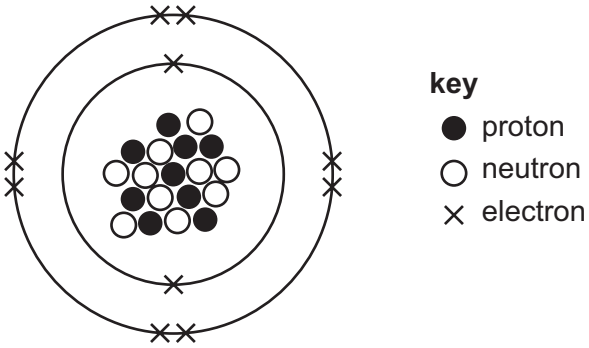
R S T

Which change represents condensation?

A R to S **B** R to T **C** S to R **D** T to R

© Cambridge University Press & Assessment 2026

15 The protons, neutrons and electrons in a particle are shown.

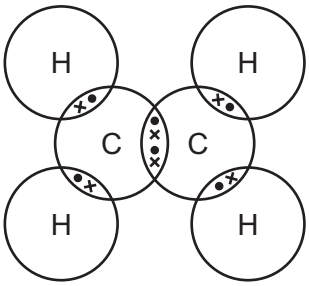


What is the symbol for this particle?

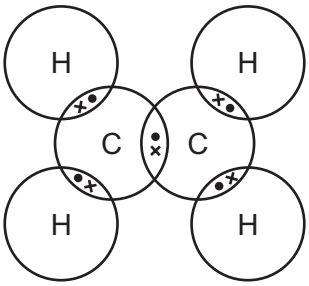
A F **B** F^- **C** Ne **D** Ne^+

16 Which dot-and-cross diagram represents the bonding in a molecule of ethene?

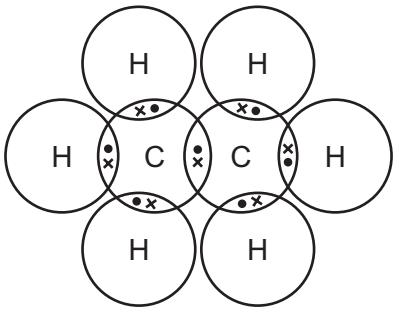
A



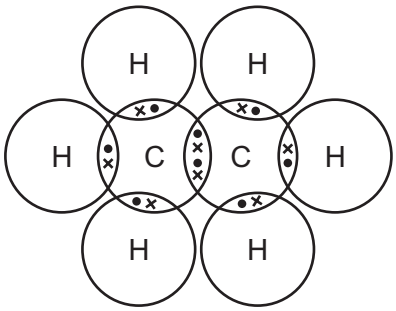
B



C



D



17 Which reaction or process produces hydrogen?

A the electrolysis of concentrated aqueous sodium chloride

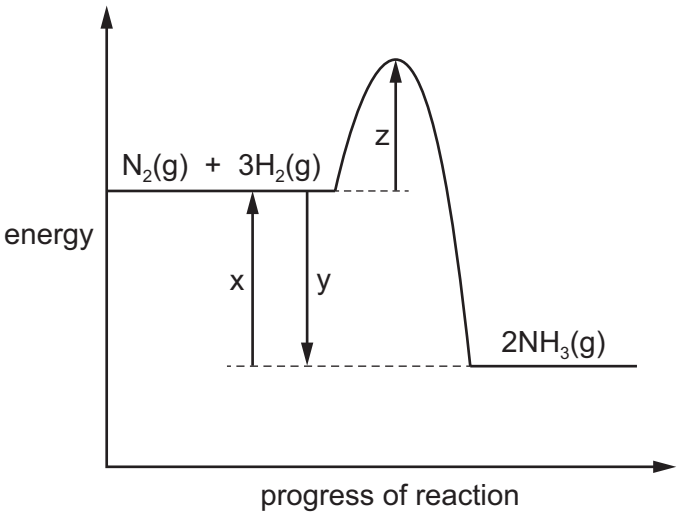
B the thermal decomposition of limestone

C the reaction of steam with ethene

D the reaction of sodium oxide with hydrochloric acid

© Cambridge University Press & Assessment 2026

18 The reaction pathway diagram for the formation of ammonia from nitrogen and hydrogen is shown.



What is the activation energy for this reaction?

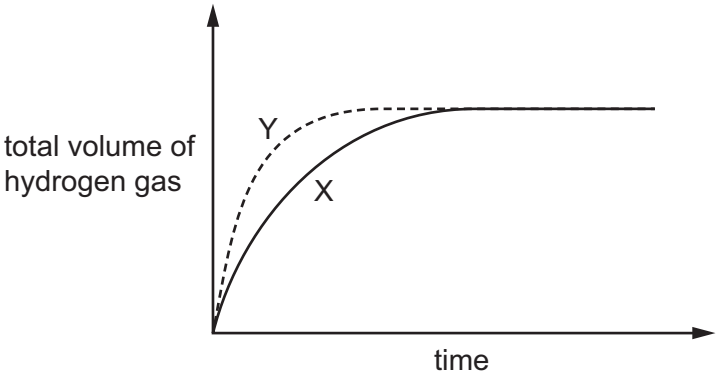
A x + z **B** y + z **C** y **D** z

19 Experiments X and Y investigate the rate of reaction between magnesium and excess dilute hydrochloric acid.

In each experiment, the total volume of hydrogen gas produced is measured over time.

There is only **one** difference in the conditions between experiment X and experiment Y.

Graphs of the results of both experiments are shown.



Which statement about the experiments is correct?

A A catalyst is used only in X.

B The hydrochloric acid in X is more concentrated than in Y.

C The temperature of Y is lower than X.

D Smaller pieces of magnesium are used in Y compared to X.

© Cambridge University Press & Assessment 2026

20 An aqueous solution of an alkali is tested separately with litmus and methyl orange indicators.

Which row is correct?

	colour with litmus	colour with methyl orange
A	blue	red
B	red	yellow
C	blue	yellow
D	red	red

21 Transition elements are metals with similar properties.

Which row shows properties typical of a transition element?

	density	melting point	colour of the sulfate
A	low	high	pink
B	low	low	white
C	high	high	pink
D	high	high	white

22 Which statements about stainless steel are correct?

1 It contains different sized atoms.

2 It is a compound of iron and chromium.

3 It is hard because its atoms slide over each other easily.

4 It is more resistant to corrosion than pure iron.

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

23 Which equation is balanced **and** represents a reaction in which a metal displaces another metal from an aqueous solution of its ion?

A $MgCl_2(aq) + Zn(s) \rightarrow ZnCl_2(aq) + Mg(s)$

B $Zn^{2+}(aq) + Cu(s) \rightarrow Zn(s) + Cu^{2+}(aq)$

C $Mg(s) + AgNO_3(aq) \rightarrow Mg(NO_3)_2(aq) + Ag(s)$

D $Fe(s) + CuSO_4(aq) \rightarrow FeSO_4(aq) + Cu(s)$

© Cambridge University Press & Assessment 2026

24 The equation for one reaction in the blast furnace is shown.

$$Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$$

Which row identifies the type of reaction and the type of each oxide?

	reaction	**Fe_2O_3**	**CO_2**
A	redox	basic	acidic
B	cracking	basic	basic
C	redox	acidic	acidic
D	cracking	acidic	basic

25 Nitrogen monoxide, NO, reacts with carbon monoxide, CO, in a catalytic converter.

The number of CO molecules that react with one NO molecule is .....1..... .

The substance reduced in this reaction is .....2..... .

Which row completes gaps 1 and 2?

	1	**2**
A	one	CO
B	one	NO
C	two	CO
D	two	NO

26 Many molecules of T combine to form a single molecule U.

What are T and U?

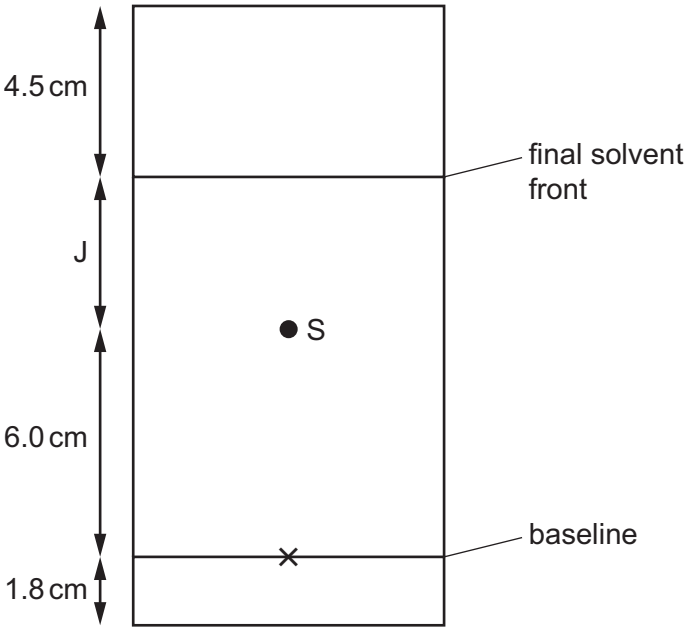
	T	**U**
A	fraction	monomer
B	monomer	fraction
C	monomer	polymer
D	polymer	monomer

© Cambridge University Press & Assessment 2026

27 Substance S is analysed by paper chromatography.

The chromatogram obtained is shown. The chromatogram is **not** drawn to scale.

The R_f value of S is 0.60.



What is distance J?

A 4.0 cm **B** 5.2 cm **C** 6.0 cm **D** 7.8 cm

28 An object is accelerating.

Which statement describes the motion of the object?

A It is at rest.

B It is moving at constant speed in a straight line.

C It is moving at constant velocity.

D It is moving with increasing velocity.

29 A system uses a 250 W electric motor to lift a 50 N load through a height of 4.0 m in 3.0 s.

What is the efficiency of this system?

A 27% **B** 38% **C** 63% **D** 67%

30 A chair of weight 40 N rests on four legs. Each leg has an area of contact with the floor of 10 cm^2.

What is the pressure on the floor due to the chair?

A 1.0 N / cm^2 **B** 4.0 N / cm^2 **C** 16 N / cm^2 **D** 40 000 N / cm^2

© Cambridge University Press & Assessment 2026

31 A gas is stored in a sealed container. The particles of the gas exert a pressure on the container walls.

What causes this pressure?

A The particles are attracted by the container walls.

B The particles collide with each other.

C The particles collide with the container walls.

D The particles repel each other.

32 Over a period of time, it is observed that the temperature of the Earth increases slightly.

Which statement about the Earth explains this observation?

A No radiation is absorbed or emitted.

B More radiation is absorbed than is emitted.

C More radiation is emitted than is absorbed.

D Radiation is emitted and absorbed at the same rate.

33 A radio transmitter emits radio waves with a frequency of 1.25×10^8 Hz. The most suitable aerial for this frequency is $\frac{1}{4}$ of a wavelength long.

The speed of radio waves is 3.0×10^8 m/s.

What is the length of the most suitable aerial?

A 0.10 m **B** 0.60 m **C** 2.4 m **D** 9.6 m

34 A glass block on a laboratory bench is surrounded by air. Light travels in the glass block and reaches the edge of the block. The angle of incidence at the edge is much smaller than the critical angle.

What happens to the light?

A All of the light emerges into the air.

B All of the light is reflected back into the block.

C Some of the light emerges into the air and some is reflected back into the block.

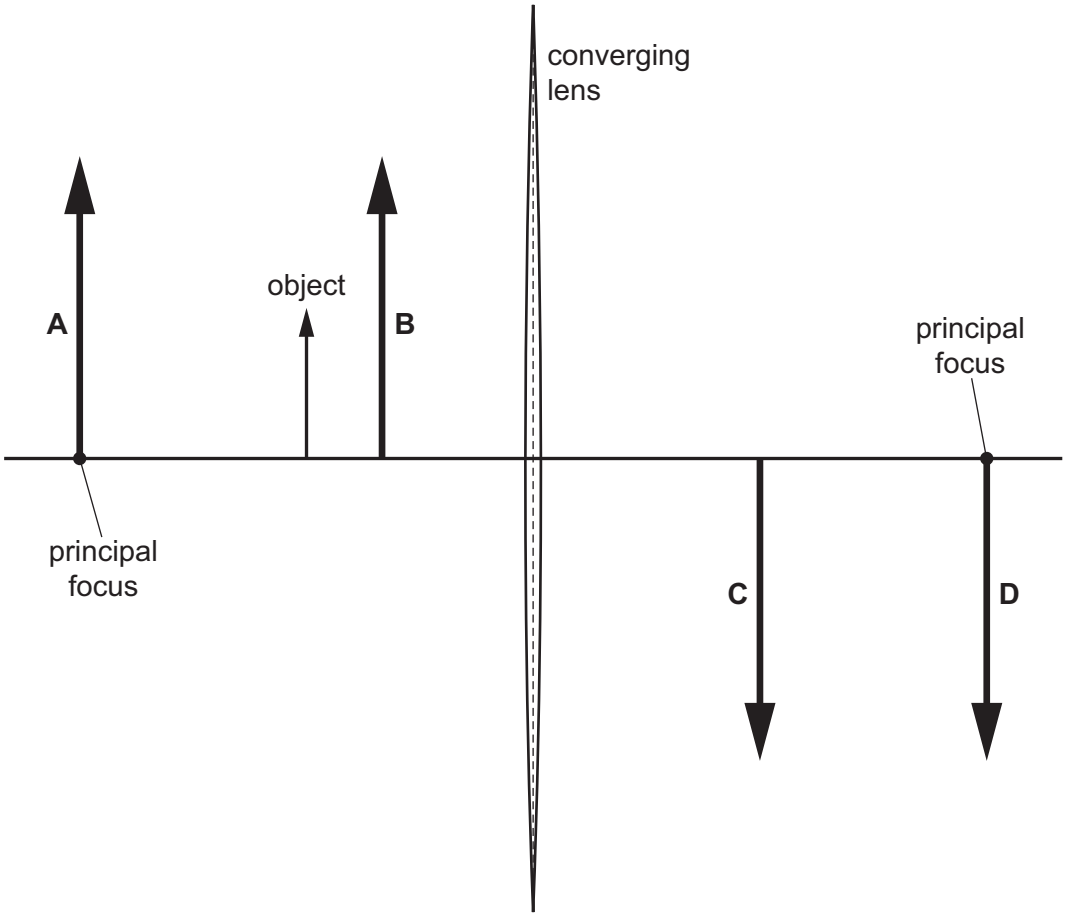
D Some of the light is reflected back into the block and some travels along the edge of the block.

© Cambridge University Press & Assessment 2026

35 A student uses a converging lens to obtain a magnified, virtual image of an object.

The diagram shows the position of the object and the principal focus on each side of the lens.

At which labelled position is the image formed?



36 What is a reason why slip rings are used in an a.c. generator?

A to connect the brushes to the external circuit as the coil turns

B to connect the ends of the coil to the brushes as the coil turns

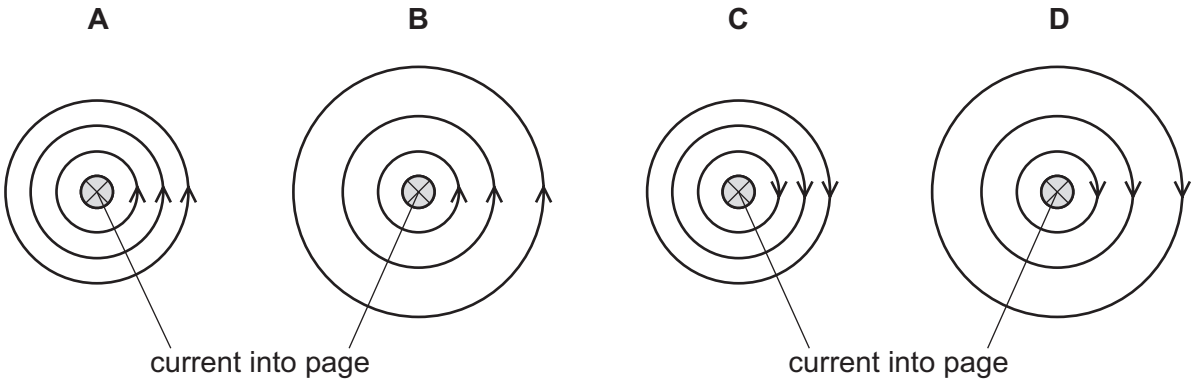
C to create the magnetic field in which the coil turns

D to turn the coil in the magnetic field

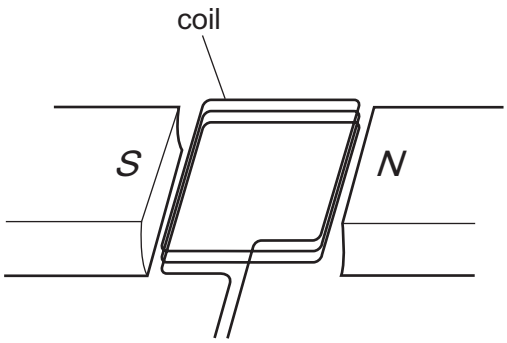
© Cambridge University Press & Assessment 2026

37 A straight wire carries a current into the page.

Which diagram shows the pattern and the direction of the magnetic field around the wire?



38 The diagram shows a coil of wire between the poles of two magnets. The coil is connected to a direct current (d.c.) power supply.



Which change increases the magnitude of the turning effect on the coil?

A decreasing the number of turns on the coil with the same current in it

B increasing the resistance of the coil with the same potential difference (p.d.) across it

C increasing the strength of the magnetic field

D reversing the direction of the magnetic field

39 A radioactive source that emits gamma radiation is stored safely in a wooden box with a lining.

Which lining is the safest to use?

A thick aluminium

B thick copper

C thick lead

D thick paper

© Cambridge University Press & Assessment 2026

40 An early phase of star forms from interstellar clouds of dust and gas due to gravitational attraction.

What is the name of the star formed?

A protostar

B red giant

C supernova

D white dwarf

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 (Cambridge University Press & Assessment) 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 our 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 International Education is the name of our awarding body and a part of Cambridge University Press & Assessment, which is a department of the University of Cambridge.

© Cambridge University Press & Assessment 2026

© Cambridge University Press & Assessment 2026

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.).