Cambridge Assessment International Education

Cambridge IGCSE™ (9–1)

CO-ORDINATED SCIENCES **0973/11**

Paper 1 Multiple Choice (Core) **October/November 2025**

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.
- 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.

1 Which characteristic of living organisms is described as the chemical reactions in cells that break down nutrient molecules and release energy?

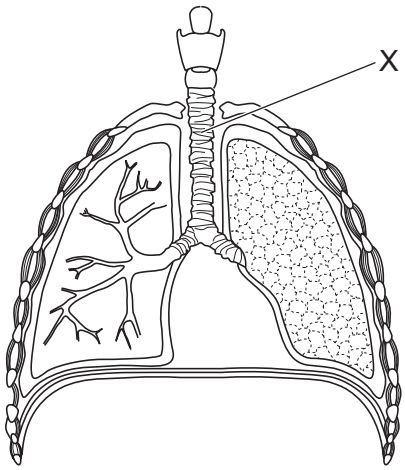
A excretion

B nutrition

C photosynthesis

D respiration

2 The diagram shows part of the breathing system in humans.



Which cell type makes up part of structure X?

A ciliated

B gamete

C palisade mesophyll

D phloem

3 What is an example of osmosis?

A a leaf stalk swells up when placed in a bowl of water

B carbon dioxide enters a leaf during photosynthesis

C the movement of red blood cells to the lungs to collect oxygen

D the passage of digested food molecules through the wall of the small intestine

4 Which row represents a food that contains a reducing sugar and a fat?

	purple with biuret reagent	orange with Benedict's solution	milky-white with ethanol	blue-black with iodine solution
A	yes	no	no	yes
B	yes	no	yes	no
C	no	yes	no	yes
D	no	yes	yes	no

5 Which statements are correct for **all** enzymes?

1 They are proteins.

2 They are **not** affected by temperature.

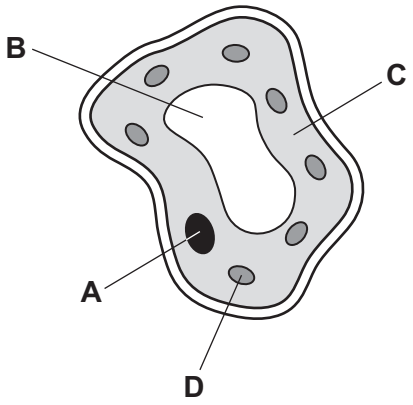
3 They increase the rate of chemical reactions.

4 They work best at a high pH.

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

6 The diagram shows a section through a cell from a leaf.

Which part makes glucose using light?



7 Which location does undigested food move to after passing through the small intestine?

A blood

B large intestine

C pancreas

D stomach

8 What is a main function of root hairs?

A absorb mineral ions

B photosynthesis

C support the stem

D transport water to the leaves

9 Which row shows the functions of white blood cells?

	transport of oxygen	phagocytosis	antibody production
A	✓	✗	✗
B	✓	✓	✗
C	✗	✓	✓
D	✗	✗	✓

10 Which gas in expired air has a greater percentage composition than in inspired air?

A carbon dioxide

B methane

C nitrogen

D oxygen

11 Which structures make up the mammalian nervous system?

A brain, muscles, impulses

B brain, nerves, spinal cord

C effectors, muscles, spinal cord

D impulses, effectors, nerves

12 Which row describes sexual reproduction?

	zygote produced	genetically identical offspring always produced
A	✓	✓
B	✓	✗
C	✗	✓
D	✗	✗

13 A list of the stages of a process is shown.

1 Choose animals with the desired characteristics.

2 Breed the animals together.

3 Choose the offspring with the desired characteristics and breed the offspring.

4 Repeat over many generations.

What is this process called?

A asexual reproduction

B artificial selection

C mutation

D natural selection

14 Which statement about elements, compounds and mixtures is correct?

A Compounds contain more than one type of atom.

B Elements only exist as single, unbonded atoms.

C Mixtures of compounds can only be separated by chemical processes.

D Mixtures of elements are separated by electrolysis.

15 What is the nucleon number of the potassium isotope $^{40}_{19}K$?

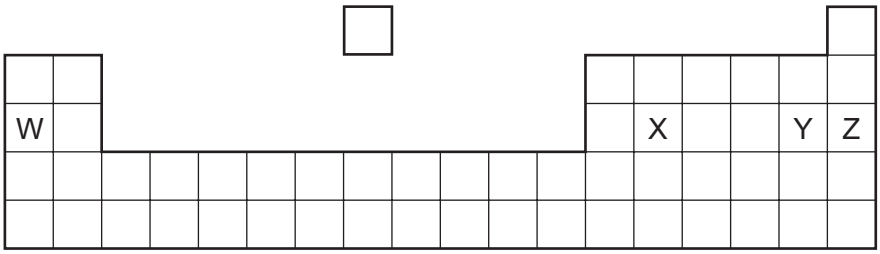
A 19 **B** 21 **C** 40 **D** 59

16 Magnesium forms an ionic compound with chlorine.

Which row describes the formation of the magnesium ion and the formula of the magnesium ion?

	formation of the ion	formula of the ion
A	electron gain	Mg^{2+}
B	electron gain	Mg^{2-}
C	electron loss	Mg^{2+}
D	electron loss	Mg^{2-}

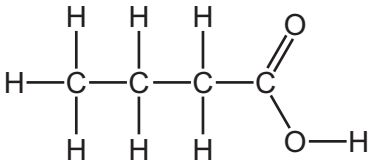
17 Part of the Periodic Table is shown.



Which elements form a bond by sharing electrons?

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

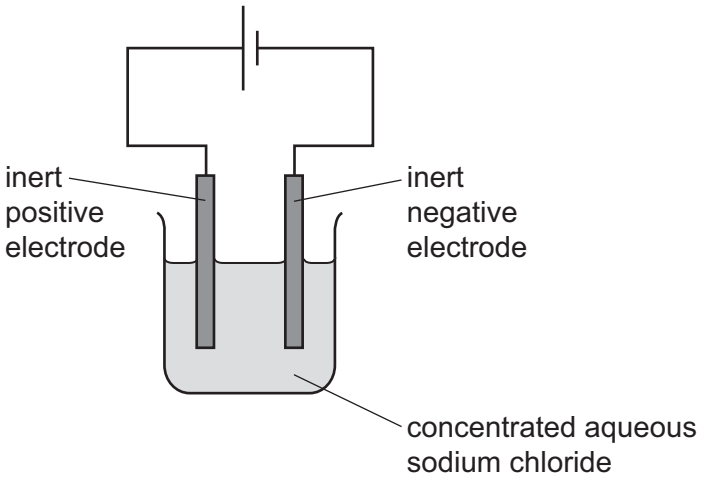
18 The structure of an organic compound is shown.



What is the formula of this compound?

A $C_3H_7O_2$ **B** $C_3H_8O_2$ **C** $C_4H_7O_2$ **D** $C_4H_8O_2$

19 The electrolysis of concentrated aqueous sodium chloride is shown.



Which statement describes the product at the cathode?

A It is a colourless gas that pops with a lighted splint.

B It is a colourless gas that relights a glowing splint.

C It is a grey-black solid.

D It is a pale yellow-green gas that bleaches litmus paper.

20 Magnesium ribbon is added to dilute hydrochloric acid.

Which observation shows that this process is exothermic?

A The pH of the solution decreases.

B The pH of the solution increases.

C The temperature of the solution decreases.

D The temperature of the solution increases.

21 Which type of substance reacts with an acid to produce a salt, water and a gas?

A alkali

B base

C carbonate

D metal

22 The element rubidium is in Group I of the Periodic Table.

It burns in oxygen to form an oxide.

Which row describes rubidium and its oxide?

	type of element	type of oxide
A	metal	acidic
B	metal	basic
C	non-metal	acidic
D	non-metal	basic

23 Which row describes the general properties of metals?

	melting point	electrical conductivity
A	high	good
B	high	poor
C	low	poor
D	low	good

24 Which air pollutants are produced by the combustion of fossil fuels in car engines?

A carbon monoxide, oxides of nitrogen and sulfur dioxide

B carbon monoxide and sulfur dioxide only

C carbon monoxide and oxides of nitrogen only

D oxides of nitrogen and sulfur dioxide only

25 Which process is used to obtain gasoline from petroleum?

A crystallisation

B chromatography

C filtration

D fractional distillation

26 Polymers are ……1…… chain molecules. They are formed when ……2…… join together.

Which words complete gaps 1 and 2?

	1	2
A	long	alkanes
B	long	monomers
C	short	alkanes
D	short	monomers

27 What is the colour of the flame produced by sodium in the flame test?

A blue-green

B red

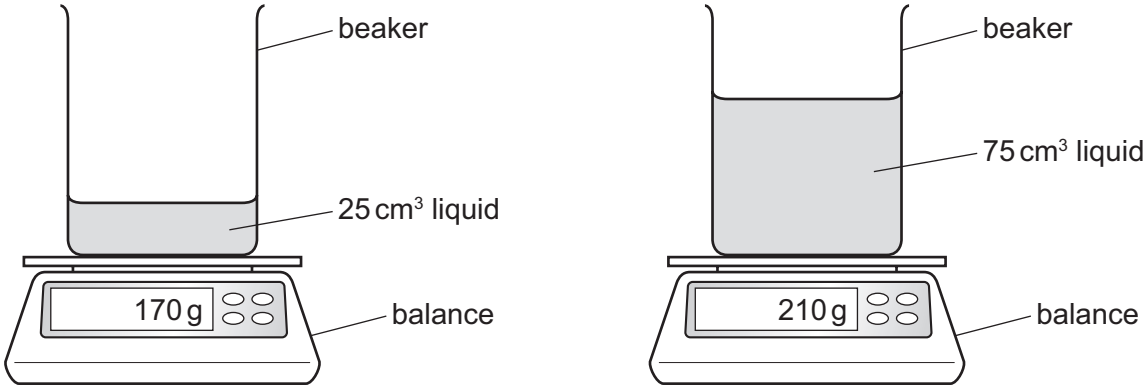
C lilac

D yellow

28 Two identical beakers each contain different volumes of the same liquid.

The mass of the beakers is measured using a balance.

The diagram shows the volume of the liquid and the reading on the balance for each beaker.



What is the density of the liquid?

A $0.53\,g/cm^3$ **B** $0.80\,g/cm^3$ **C** $1.3\,g/cm^3$ **D** $2.8\,g/cm^3$

29 What is a unit of energy?

A W **B** N **C** kg **D** J

30 Which method of generating electrical power causes carbon dioxide to be released into the atmosphere?

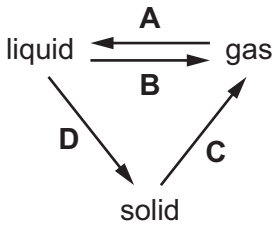
A combustion of fossil fuels

B nuclear fission

C use of solar cells

D use of wind turbines

31 Which labelled arrow on the diagram represents condensation?



32 What is a method for the transfer of thermal energy through a vacuum?

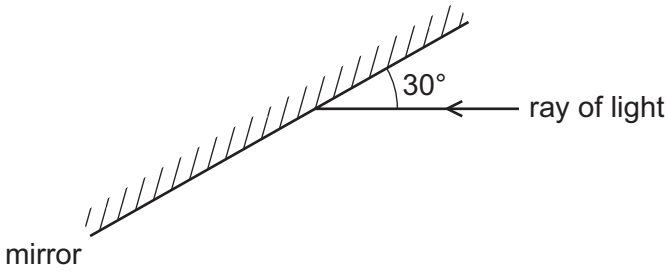
A conduction

B convection

C insulation

D radiation

33 A ray of light strikes a plane mirror.

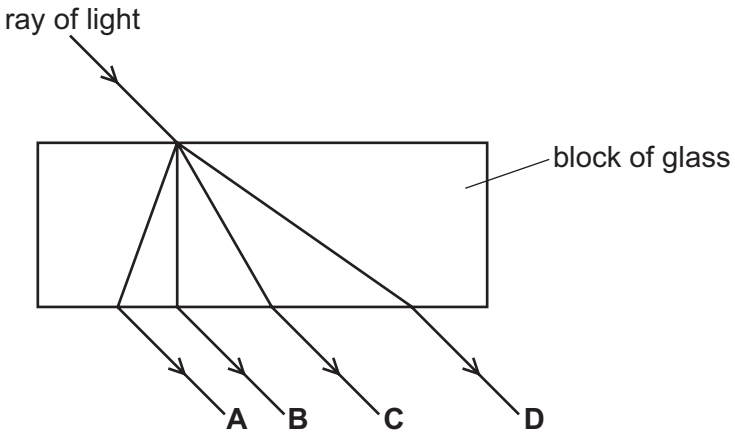


What is the angle of reflection of the ray?

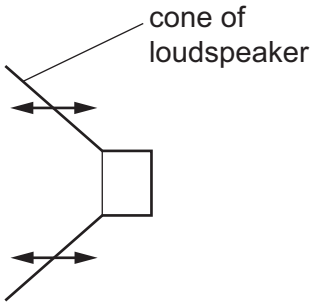
A 150° **B** 90° **C** 60° **D** 30°

34 The diagram shows a ray of light in air striking a rectangular block of glass.

Which labelled arrow shows the path of the light into and out of the block?



35 The diagram shows a loudspeaker. The cone of the loudspeaker vibrates backwards and forwards in the direction of the arrows. These vibrations produce a sound wave in the air.



Which change results in the loudspeaker producing sound with a higher pitch?

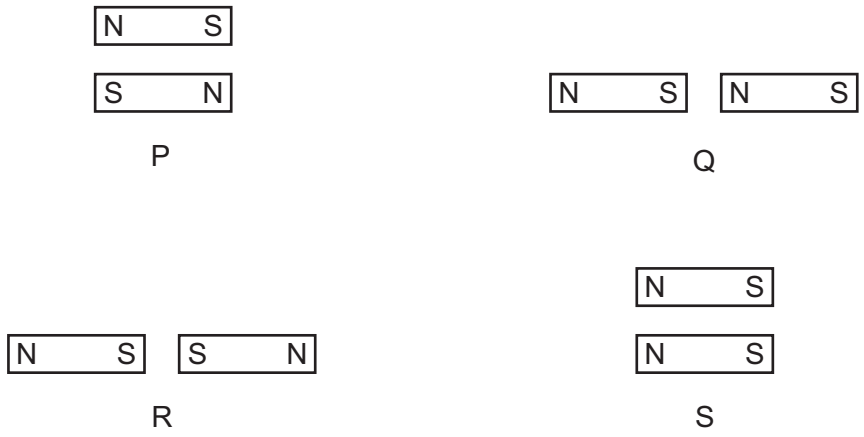
A increasing the distance moved by the cone during each vibration

B increasing the time taken for each vibration

C decreasing the distance moved by the cone during each vibration

D decreasing the time taken for each vibration

36 The diagrams P, Q, R and S show four pairs of bar magnets.



For which two pairs of magnets is there a force of attraction between the magnets?

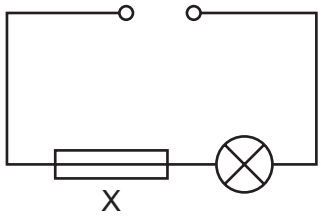
A P and Q **B** P and S **C** Q and R **D** R and S

37 There is a current of 4.0 A in a resistor. The voltage across the resistor is 8.0 V.

What is the resistance of the resistor?

A 0.50 Ω **B** 2.0 Ω **C** 12 Ω **D** 32 Ω

38 Component X protects the circuit shown in the diagram.



What is component X?

A fixed resistor

B fuse

C switch

D variable resistor

39 The mass of a radioactive isotope in a sample is 720 g. The half-life of the isotope is 4.0 hours.

Which mass of the isotope remains undecayed after 12 hours?

A 60 g **B** 90 g **C** 180 g **D** 240 g

40 Which row shows a dwarf planet and an object that orbits a planet?

	dwarf planet	object that orbits a planet
A	Mercury	moon
B	Mercury	asteroid
C	Pluto	moon
D	Pluto	asteroid

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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.).