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CAMBRIDGE
International Education

Cambridge IGCSE™

COMBINED SCIENCE **0653/13**

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).

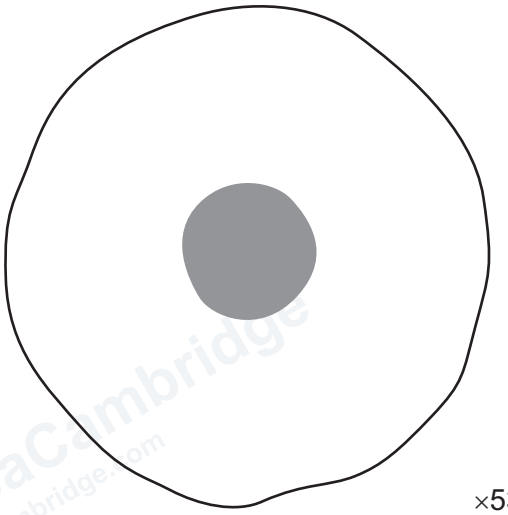
INFORMATION

- 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.

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[Turn over

1 The diagram shows a magnified human ovum.



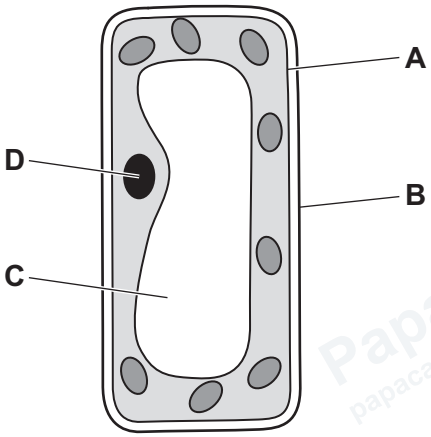
×533

The ovum in the diagram measures 64 mm in diameter.

What is the actual diameter of the ovum?

A 0.012 mm **B** 0.12 mm **C** 0.83 mm **D** 8.30 mm

2 Which part of a cell contains the genetic information?



3 The equation for photosynthesis is shown.

carbon dioxide + water → X + oxygen

What does X represent?

A carbon

B chlorophyll

C glucose

D light

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4 Which row describes the effects of physical digestion on food?

	effect on size of food pieces	chemical change occurs
A	large to small	no
B	large to small	yes
C	small to large	no
D	small to large	yes

5 Which pathway is taken by water through a plant?

A mesophyll cells → xylem → root cortex cells → root hair cells

B root cortex cells → root hair cells → mesophyll cells → xylem

C root hair cells → root cortex cells → xylem → mesophyll cells

D root hair cells → xylem → root cortex cells → mesophyll cells

6 What is a type of blood vessel that carries blood from the heart to the body?

A atria

B artery

C capillary

D vein

7 What are body defences against disease?

1 hairs in nose

2 hairs on skin

3 red blood cells

4 white blood cells

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

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8 Which row describes the changes to the depth and rate of breathing when a person starts to exercise?

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

9 Which process uses energy released from glucose?

A diffusion of oxygen

B osmosis of water

C synthesis of enzymes

D transpiration of water vapour

10 Which term is used to describe antibiotics?

A drugs

B enzymes

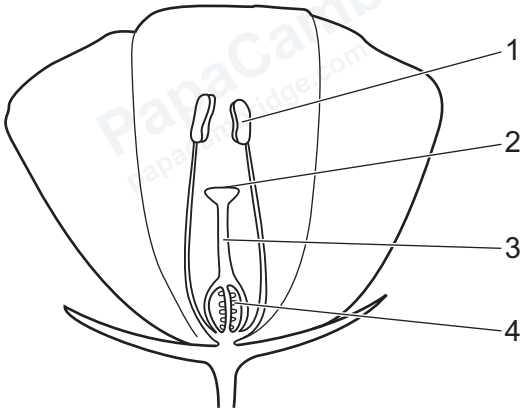
C hormones

D nutrients

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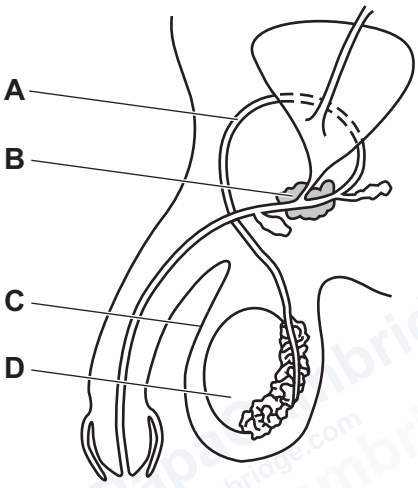
11 The diagram shows a section through an insect-pollinated flower.



Which row identifies the sites of pollen production, pollination and fertilisation?

	pollen production	pollination	fertilisation
A	1	2	4
B	1	3	4
C	2	3	1
D	4	2	3

12 The diagram shows the male reproductive system.



Which row identifies the labelled structure and states its function?

	name of structure	function of structure
A	sperm duct	sperm pass directly into the uterus from this tube
B	testis	produces the sperm
C	scrotum	holds the testis
D	prostate gland	stores the sperm

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13 What is the principal source of energy in biological systems?

A food

B plants

C respiration

D the Sun

14 Salt, sand and water are stirred together in a beaker.

The salt dissolves in the water.

What does the beaker contain?

A a mixture of a solution and a solid

B a mixture of three elements

C only one compound and one solid

D only one compound containing three elements

15 Which statement about elements in the same period of the Periodic Table is correct?

A Elements in the same period have similar chemical properties.

B The elements become more metallic across the period.

C The number of electron shells in an atom increases across the period.

D The number of outer-shell electrons in an atom increases across the period.

16 Which statement about particles is correct?

A H_2 has the same number of protons as neutrons.

B H^+ has more electrons than protons.

C NH_3 has the same number of protons as electrons.

D OH^- contains more protons than electrons.

17 Which substances undergo electrolysis?

1 concentrated aqueous sodium chloride

2 distilled water

3 molten lead(II) bromide

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

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18 Which statement describes redox reactions?

A Redox reactions involve only oxidation.

B Redox reactions involve only reduction.

C Redox reactions involve simultaneous oxidation and reduction.

D Redox reactions involve oxidation followed by reduction.

19 A salt is added to water.

The temperature of the water is measured before the salt is added and after the salt has dissolved completely.

initial temperature / °C	final temperature / °C
22	15

Which word describes this process?

A condensation

B crystallisation

C endothermic

D exothermic

20 Separate samples of ammonia, carbon dioxide, hydrogen and oxygen are tested with universal indicator.

How many of these gases turn the universal indicator orange or red?

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

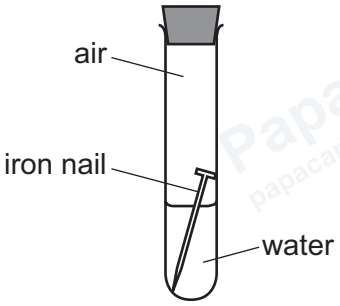
21 Which row shows the properties of a transition element?

	melting point	electrical conductivity	colour of chloride	catalytic properties
A	high	high	white	no
B	high	low	white	no
C	high	high	green	yes
D	low	low	blue	yes

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22 An iron nail is left for a few days in a sealed test-tube containing air and water.



Which change to the amount of gases in the air in the test-tube occurs as the iron nail rusts?

A The amount of carbon dioxide decreases.

B The amount of carbon dioxide increases.

C The amount of nitrogen increases.

D The amount of oxygen decreases.

23 Which metal is extracted from its ore using carbon?

A aluminium

B copper

C magnesium

D potassium

24 Four gases are listed.

1 carbon dioxide

2 nitrogen

3 oxygen

4 methane

Which gases increase global warming?

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

25 Which statements about fossil fuels are correct?

1 Natural gas and petroleum are the only two fossil fuels.

2 Petroleum contains a mixture of hydrocarbons.

3 Petroleum is separated into useful substances by chromatography.

4 The main constituent of natural gas is an alkane.

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

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26 Which statement about mixtures is correct?

A A filtrate is a solution that passes through a filter.

B A residue is a liquid that is removed when the mixture is distilled.

C A solute is a mixture of a soluble solid and a solvent.

D A solvent is a solid that can be dissolved in water.

27 Aqueous X is acidified with dilute nitric acid.

Aqueous barium nitrate is then added.

A white precipitate forms.

Which anion does X contain?

A carbonate

B chloride

C nitrate

D sulfate

28 What is the meaning of the weight of an object?

A the density of the material from which it is made

B the force exerted on it by gravity

C the mass of the matter it contains

D the pressure it exerts on the ground

29 A measuring cylinder contains 60 cm^3 of water.

A solid object of mass 120 g is lowered into the water until it is completely submerged.

The new reading on the measuring cylinder is 80 cm^3.

What is the density of the object?

A 0.50 g/cm^3 **B** 1.5 g/cm^3 **C** 2.0 g/cm^3 **D** 6.0 g/cm^3

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30 A crane lifts three loads, X, Y and Z.

- Load X weighs 400 N and is lifted through 15 m.
- Load Y weighs 400 N and is lifted through 12 m.
- Load Z weighs 600 N and is lifted through 12 m.

The work done on each load is calculated.

What is the order of the loads starting with the load with the least work done to the load with the most work done?

A $X \rightarrow Y \rightarrow Z$ **B** $Y \rightarrow X \rightarrow Z$ **C** $Z \rightarrow X \rightarrow Y$ **D** $Z \rightarrow Y \rightarrow X$

31 Which row gives two properties of a liquid?

	property 1	property 2
A	easy to compress	flows
B	easy to compress	does **not** flow
C	difficult to compress	flows
D	difficult to compress	does **not** flow

32 What happens to a metal rod when its temperature increases?

A It becomes longer.

B It becomes shorter.

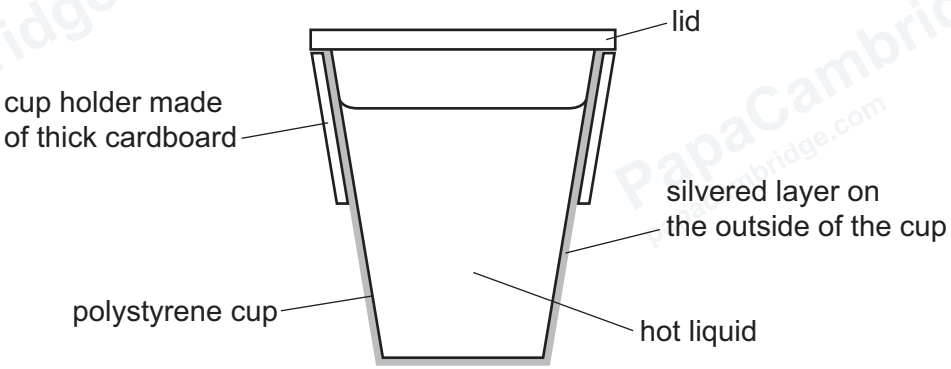
C It becomes heavier.

D It becomes lighter.

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33 A student designs a cup with features that reduce energy transfer from a hot liquid in the cup to the surroundings.



Which feature only reduces energy transfer by radiation?

A a silvered layer on the outside of the cup

B a lid

C a cup holder made of thick cardboard

D a cup made of polystyrene

34 Red light enters a block of glass and the direction of travel of the light changes.

What is this change of direction called?

A dispersion

B radiation

C reflection

D refraction

35 Radio waves, visible light and X-rays all travel in a vacuum.

Which statement about the waves is correct?

A Radio waves travel at the greatest speed.

B Visible light travels at the greatest speed.

C X-rays travel at the greatest speed.

D They all travel at the same speed.

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36 A sound becomes louder and lower pitched.

Which row states how the amplitude and the frequency of the sound change?

	amplitude	frequency
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

37 A student measures the current in a circuit, the voltage of the power supply and the time for which the circuit is switched on.

Which quantities are needed to calculate the energy transferred?

A the current, the voltage and the time

B the current and the voltage only

C the current and the time only

D the voltage and the time only

38 What is meant by a kilowatt-hour (kWh)?

A the energy transferred in 1 hour by an appliance with a power of 1 kW

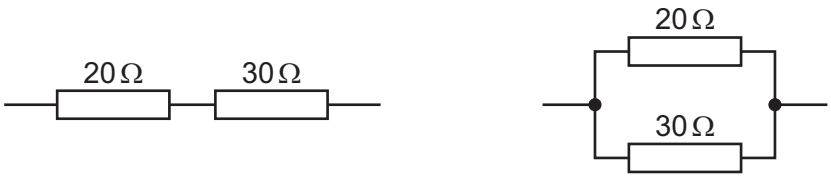
B the power of an appliance that transfers 1 kW of energy in 1 hour

C the time taken for an appliance with a power of 1 kW to transfer 1 J of energy

D the time taken for an appliance to transfer 1 kW of energy

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39 A 20 Ω and a 30 Ω resistor are connected first in series and then in parallel, as shown.



Which row describes the combined resistance of the two resistors in series and in parallel?

	combined resistance in series	combined resistance in parallel
A	between 20 Ω and 50 Ω	50 Ω
B	less than 20 Ω	50 Ω
C	50 Ω	less than 20 Ω
D	50 Ω	between 20 Ω and 50 Ω

40 Which row contains two correct statements about the Solar System?

	statement 1	statement 2
A	Pluto is a dwarf planet.	An asteroid orbits a planet.
B	Pluto is a dwarf planet.	A moon orbits a planet.
C	The Sun orbits the Earth.	An asteroid orbits a planet.
D	The Sun orbits the Earth.	A moon orbits a planet.

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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.).

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