Cambridge Assessment International Education

Cambridge IGCSE™

PHYSICS **0625/11**

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.

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

1 Which measuring instrument is used to determine the volume of water in a cup?

A clock

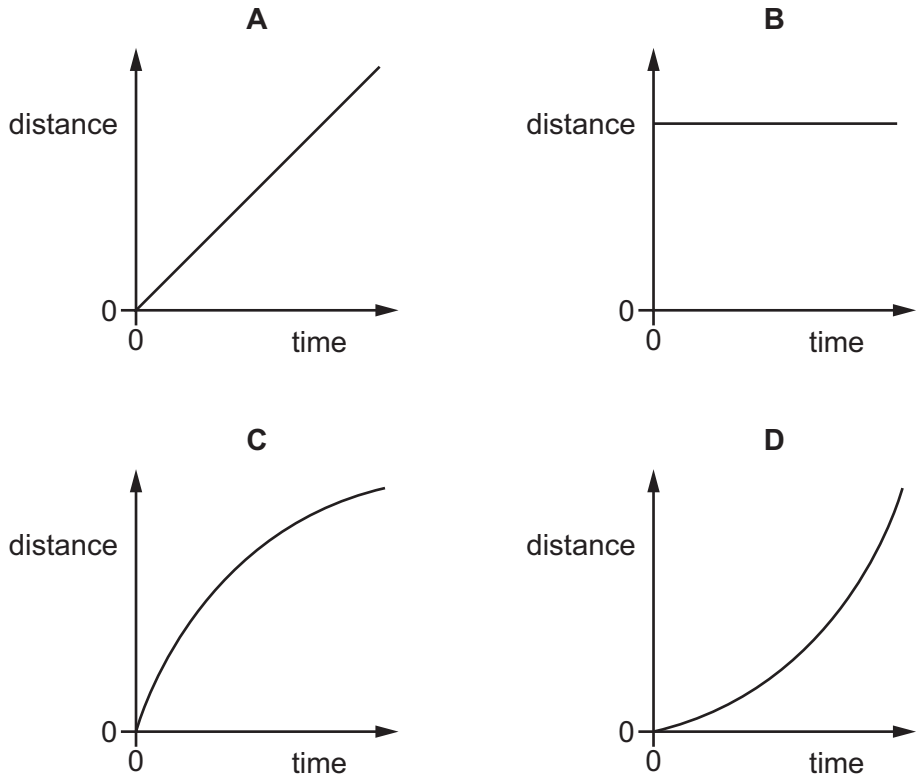
B measuring cylinder

C ruler

D thermometer

2 The diagrams show distance–time graphs for four objects.

Which object is moving with increasing speed?



3 A space station orbits above the Earth. There is an astronaut in the space station.

In the space station, the acceleration of free fall is $7.5\,m/s^2$.

On Earth, the acceleration of free fall is $9.8\,m/s^2$.

Which row about the astronaut's mass and weight in the space station is correct?

	mass of astronaut	weight of astronaut
A	same as on the Earth	less than on the Earth
B	same as on the Earth	greater than on the Earth
C	lower than on the Earth	less than on the Earth
D	lower than on the Earth	greater than on the Earth

4 A student is asked to predict whether a solid floats in a liquid.

Which information does the student require?

A the density of the liquid and the mass of the solid

B the density of the solid and the density of the liquid

C the density of the solid and the mass of the liquid

D the mass of the solid and the mass of the liquid

5 Which property of an object **never** changes when a force acts on the object?

A mass

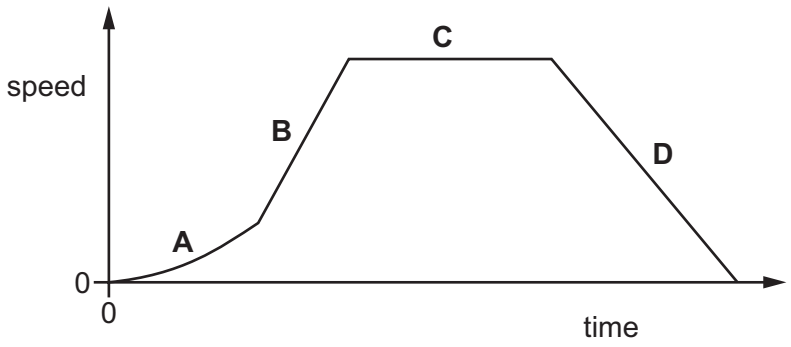
B shape

C size

D speed

6 A car is travelling along a straight horizontal road. The speed–time graph is shown.

In which labelled part of the journey is the resultant force on the car zero?



7 Which list contains only energy stores?

A electrostatic, kinetic, light

B electrostatic, kinetic, nuclear

C electrostatic, light, nuclear

D kinetic, light, nuclear

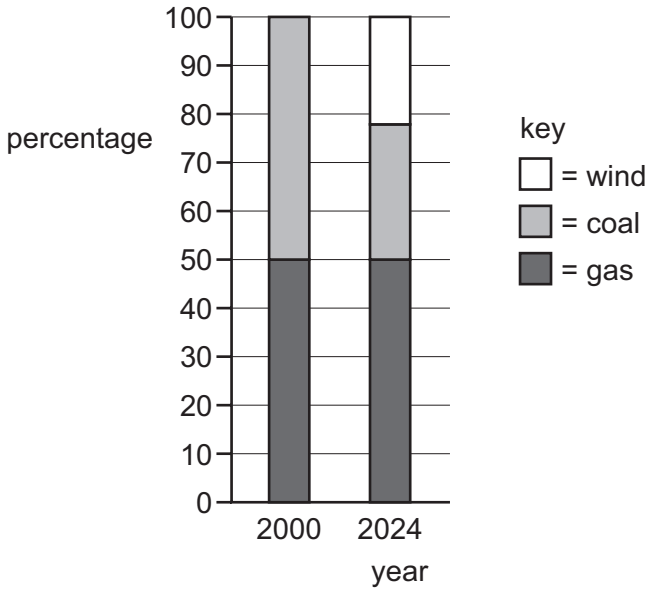
8 What needs to be known to calculate the work done by a force acting on an object?

	the size of the force	the distance the force moves the object	the time for which the force acts
A	✓	✓	✓
B	✓	✓	✗
C	✓	✗	✓
D	✓	✗	✗

key
✓ = needed
✗ = **not** needed

9 Different energy resources are used to produce electricity on a small island.

The chart shows the percentages of each energy resource used in 2000 and in 2024.



Which row correctly describes any changes in the percentage for 2024 compared with 2000?

	percentage of energy resource used	
	coal	renewable
A	decrease	no change
B	no change	increase
C	decrease	increase
D	no change	no change

10 Which situation is **not** explained by the equation $P = \frac{F}{A}$?

A using a longer spanner than normal to undo a tight nut

B hammering a nail into a piece of wood

C tractors using wide tyres in a muddy field

D a sharp kitchen knife cutting vegetables more easily than a blunt one

11 A substance is heated. The substance changes state from a liquid to a gas.

When the gas is cooled, it first becomes a liquid and finally a solid.

What is the order of changes of state for this substance?

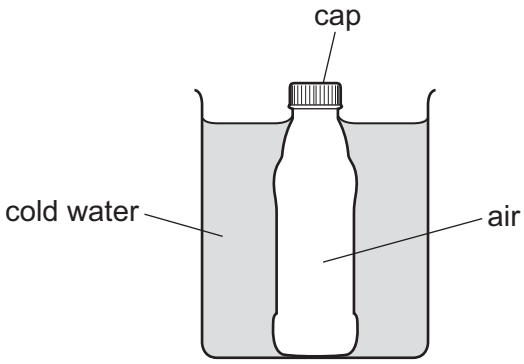
A condensation → melting → freezing

B vaporisation → condensation → melting

C vaporisation → condensation → freezing

D melting → vaporisation → freezing

12 A glass bottle containing warm air is sealed with a screw cap and then cooled in cold water.



The contraction of the glass bottle can be ignored.

What remains the same during the cooling?

A the air pressure inside the bottle

B the energy of the air particles in the bottle

C the force on the cap made by the air particles in the bottle

D the volume of air in the bottle

13 A gas is stored in a container of constant volume.

The temperature of the gas is increased.

What happens to the particles of the gas?

A The distance between the particles increases.

B The mass of the particles increases.

C The number of particles increases.

D The speed of the particles increases.

14 One end of a shiny metal rod is heated, and the other end quickly gets hot.

Which statement describes why the other end quickly gets hot?

A Metals are good thermal conductors.

B Metals are poor thermal conductors.

C Shiny surfaces are good emitters of infrared radiation.

D Shiny surfaces are poor emitters of infrared radiation.

15 Vacuum flasks usually have silvered walls that help to keep the contents of the flask hot.

Why are the walls silvered?

A to absorb thermal energy from the air around the flask

B to increase the rate of convection inside the flask

C to reduce energy loss to the surroundings by conduction

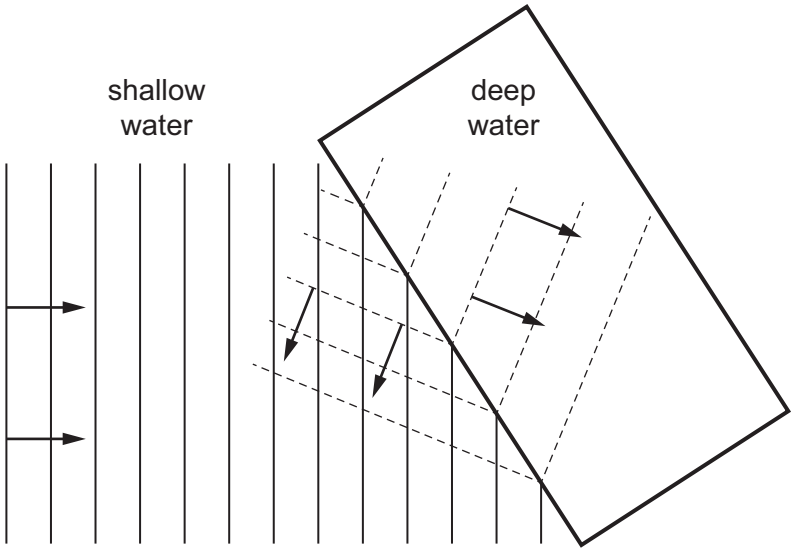
D to reflect thermal radiation back into the flask

16 The temperature of the air in the atmosphere around us increases.

Which row describes the change in the density of the air and which form of thermal energy transfer occurs as a result of this change?

	what happens to the density of the air	thermal energy transfer that occurs as a result
A	decreases	conduction
B	decreases	convection
C	increases	conduction
D	increases	convection

17 A student draws a diagram to show two different properties of a water wave. The arrows show the wave directions.



Which two wave properties does the diagram show?

A refraction and diffraction

B reflection and dispersion

C reflection and diffraction

D reflection and refraction

18 A seismic wave consists of vibrations that are parallel to the direction of propagation.

What is the type of wave and what is the name of the seismic wave?

	type of wave	name of seismic wave
A	longitudinal	P-wave
B	longitudinal	S-wave
C	transverse	P-wave
D	transverse	S-wave

19 A person stands 1.0 m in front of a plane mirror. The mirror is moved away from the person at a speed of 1.0 m / s.

Which statement is correct?

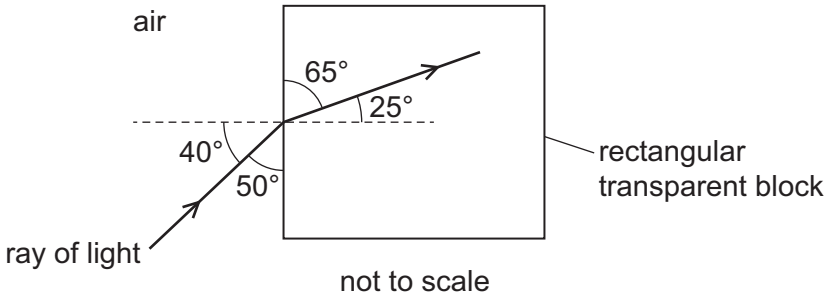
A The image moves away from the person at a speed of 1.0 m / s.

B The image moves away from the person at a speed of 2.0 m / s.

C The image moves towards the person at a speed of 1.0 m / s.

D The image moves towards the person at a speed of 2.0 m / s.

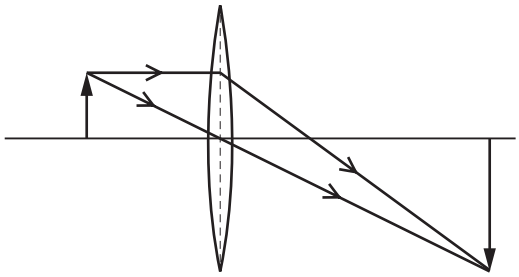
20 A ray of light passes from air into a rectangular transparent block.



What is the angle of refraction?

A 25° **B** 40° **C** 50° **D** 65°

21 The diagram shows the formation of an image by a thin converging lens.



Which terms describe the image?

A diminished and upright

B real and inverted

C virtual and diminished

D virtual and inverted

22 Valuable objects are often marked with a special ink. In visible light, the ink **cannot** be seen.

The ink can be seen when exposed to the right type of electromagnetic waves.

Which type of electromagnetic waves are used for this type of security marking?

A infrared

B microwaves

C ultraviolet

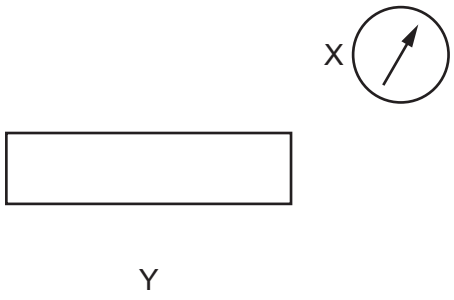
D X-rays

23 A siren is emitting a sound. As time passes, the sound becomes louder and higher pitched.

What is happening to the amplitude and to the frequency of the emitted sound wave?

	amplitude	frequency
A	decreasing	decreasing
B	decreasing	increasing
C	increasing	decreasing
D	increasing	increasing

24 A plotting compass is placed at position X near to a bar magnet. The diagram shows the direction in which the compass points.



Which diagram shows the direction in which the plotting compass placed at position Y points?

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

25 A student rubs a plastic rod with a cloth.

Electrons move from the cloth to the rod.

Which statement about the rod is correct?

A It is negatively charged and is attracted by a negatively charged object.

B It is negatively charged and is attracted by a positively charged object.

C It is positively charged and is attracted by a negatively charged object.

D It is positively charged and is attracted by a positively charged object.

26 Which expression is used to calculate electrical resistance?

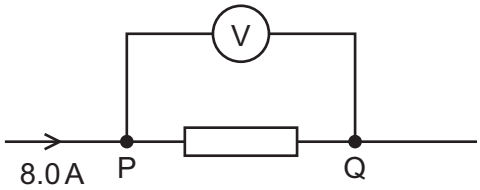
A charge ÷ potential difference

B current ÷ potential difference

C potential difference ÷ charge

D potential difference ÷ current

27 The diagram shows part of an electric circuit. The reading on the voltmeter is 16 V. The current in the resistor is 8.0 A.



One coulomb of charge flows from P to Q through the resistor.

How much energy is transferred in the resistor?

A 2.0 J **B** 8.0 J **C** 16 J **D** 128 J

28 What is the combined resistance of a 3.0 Ω resistor and a 6.0 Ω resistor connected in parallel?

A 2.0 Ω **B** 4.5 Ω **C** 9.0 Ω **D** 18 Ω

29 A 5.0 Ω resistor is connected in series with a 10 Ω resistor.

There is a constant current in the 5.0 Ω resistor.

Which statement about the two resistors is correct?

A The current is greater in the 5.0 Ω resistor.

B The current is greater in the 10 Ω resistor.

C The potential difference (p.d.) is greater across the 5.0 Ω resistor.

D The potential difference (p.d.) is greater across the 10 Ω resistor.

30 Which statement explains where the switch for an electric lamp is connected?

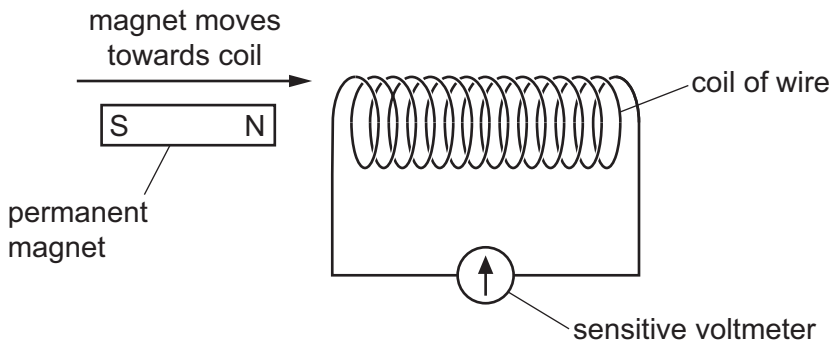
A The switch is in **either** the live wire **or** in the neutral wire as both wires carry the current.

B The switch is in the earth wire to prevent the fuse from blowing when the lamp is in use.

C The switch is in the live wire so that the lamp is disconnected from the mains supply when the switch is off.

D The switch is in the neutral wire to prevent current leakage when the lamp is switched off.

31 The diagram shows a magnet moving towards a coil of wire.



When the magnet moves towards the coil of wire, an electromotive force (e.m.f.) is induced.

Students are asked for one change that will increase the magnitude of the induced e.m.f.

Three changes are proposed.

1 Move the magnet more quickly.

2 Use a stronger magnet.

3 Increase the number of turns on the coil.

Which changes, on their own, will increase the magnitude of the induced e.m.f.?

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

32 What is used to identify the pattern and direction of the magnetic field due to the current in a straight wire?

A an ammeter

B a compass

C iron filings

D a voltmeter

33 Which description of the structure of an atom is correct?

A negatively charged electrons surrounding an uncharged nucleus

B negatively charged electrons surrounding a positively charged nucleus

C positively charged electrons surrounding an uncharged nucleus

D positively charged electrons surrounding a negatively charged nucleus

34 A radioactive source is placed 20 mm in front of a detector.

The count rate from the source is 2000 counts / minute.

With a thin sheet of paper between the source and the detector, the count rate is 2000 counts / minute.

With a sheet of aluminium 5 mm thick between the source and the detector, the count rate is 1200 counts / minute.

Which radioactive emissions are coming from the source?

A alpha, beta and gamma

B alpha only

C beta and gamma only

D beta only

35 Which type of radiation is measured using a detector connected to a counter?

A visible light

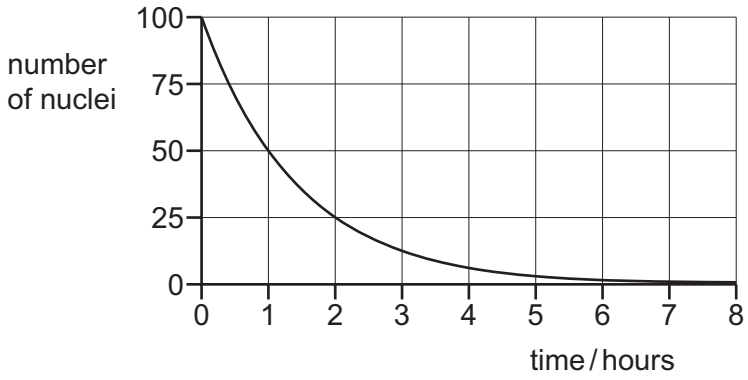
B ionising nuclear

C microwave

D thermal

36 A sample of a radioactive isotope contains 100 nuclei of the isotope.

The graph shows the number of nuclei of that isotope that remain in the sample as time passes.



What is the half-life of the radioactive isotope?

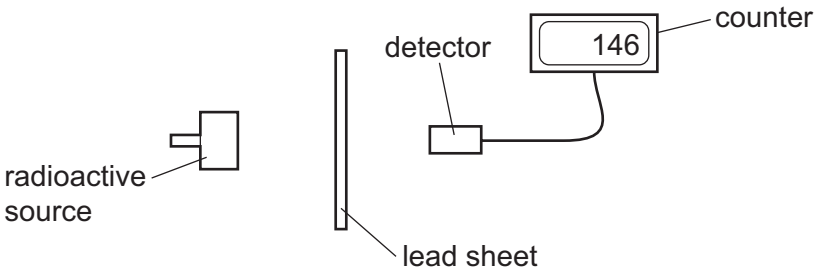
A 1 hour

B 4 hours

C 6 nuclei

D 50 nuclei

37 A teacher does an experiment to measure radiation passing through a lead sheet.



Three students suggest how the teacher can reduce the risk to her health.

student 1 Move the radioactive source with her bare hands.

student 2 Stay as close as possible to the radioactive source during the experiment.

student 3 Minimise the time of the experiment.

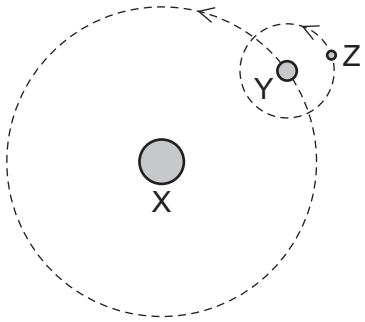
Which students are correct?

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

38 The diagram represents three objects, X, Y and Z, in space.

Object Y orbits object X.

Object Z orbits object Y.



Which types of object are X, Y and Z?

	object X	object Y	object Z
A	planet	moon	star
B	planet	star	moon
C	star	planet	moon
D	star	moon	planet

39 Which statement about the Sun is correct?

A The Sun consists of mainly carbon and nitrogen.

B The Sun is the largest planet in the Solar System.

C The Sun is a medium-sized star.

D The Sun radiates most of its energy in the gamma-ray region of the electromagnetic spectrum.

40 What is the name of the galaxy that contains the Sun?

A Andromeda

B Milky Way

C Red Shift

D Universe

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