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CAMBRIDGE
International Education

Cambridge IGCSE™

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

PHYSICS **0625/52**

Paper 5 Practical Test **February/March 2026**

1 hour 15 minutes

You must answer on the question paper.

You will need: The materials and apparatus listed in the confidential instructions

INSTRUCTIONS
- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen. Do **not** use correction fluid or tape.
- Do **not** write on any bar codes.
- You may use a calculator.
- You should show all your working and use appropriate units.

INFORMATION
- The total mark for this paper is 40.
- The number of marks for each question or part question is shown in brackets [ ].

For Examiner's Use	
1	
2	
3	
4	
Total	

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

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1 In this experiment, you will determine the density of a glass ball.

(a) (i)
- Pour water into a measuring cylinder until it is approximately half full.
- Place the measuring cylinder of water on the top-pan balance.
- Record the combined mass m_1 of the measuring cylinder and water.

Give your answer to the nearest gram.

m_1 = ... g [1]

(ii) Describe **one** technique for using a top-pan balance to measure the mass of the measuring cylinder and water to ensure an accurate reading.

....

.... [1]

(iii) Measure the volume V_1 of water in the measuring cylinder.

V_1 = ... cm^3 [1]

(iv) Describe **one** technique for using a measuring cylinder to measure the volume of the water to ensure an accurate reading.

....

.... [1]

(b) Place five glass balls into the water in the measuring cylinder, ensuring no water splashes out.

(i) Measure the mass m_2 of the measuring cylinder, water and five glass balls.

m_2 = ... g [1]

(ii) Calculate the mass m of one glass ball.

m = ... g [1]

(iii) Measure the volume V_2 of the water and five glass balls.

V_2 = ... cm^3 [1]

(iv) Calculate the volume V of one glass ball.

V = ... cm^3 [1]

(v) Calculate the density ρ of a glass ball. Use your values from **1(b)(ii)** and **1(b)(iv)** and the equation shown.

$$\rho = \frac{m}{V}$$

ρ = ... g/cm^3 [1]

(c) Suggest **two** improvements that will help a student to determine a more accurate value for the volume of a glass ball.

1 ....

....

2 ....

....
[2]

[Total: 11]

2 In this experiment, you will investigate the behaviour of a spring.

A clamp stand and spring have been set up for you. Refer to Figure 2.1.

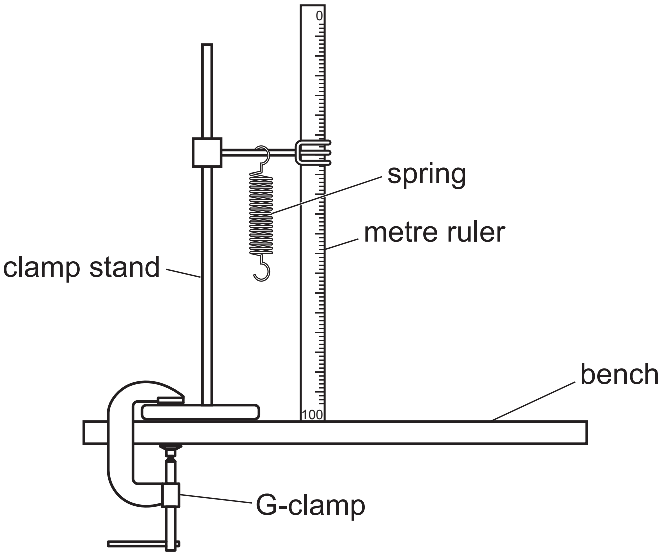

Figure 2.1

(a) **(i)** Measure the initial length l_0 of the spring with no load. Give your answer to the nearest mm.

Do **not** include the loops at the ends of the spring in your measurement.

l_0 .... mm [1]

(ii) Draw a diagram of the spring and show clearly the length l_0.

The diagram does **not** need to be drawn to scale.

[1]

(iii) Describe **two** techniques that you use when measuring the length of the spring to ensure an accurate reading.

You may draw a diagram.

1 ....

....

2 ....

....
[2]

(b)
- Suspend a load L = 1.0 N from the spring.
- Record the new length l of the spring in Table 2.1.
- Calculate the extension x of the spring using the equation $x = l - l_0$.
- Record the value of x in Table 2.1.
- Repeat the procedure using loads L = 2.0 N, 3.0 N, 4.0 N and 5.0 N.

Table 2.1

L / N	l / mm	x / mm
1.0		
2.0		
3.0		
4.0		
5.0		

[2]

(c) **(i)** Plot a graph of L / N (y-axis) against x / mm (x-axis).

Start the axes from the origin (0, 0).

Draw a best-fit line.

[4]

(ii) State and explain if your line shows L and x are directly proportional.

....

....

.... [1]

[Total: 11]

3 In this experiment, you will investigate circuits containing different combinations of resistors.

(a) **(i)** Circuit 1 has been set up for you.

Refer to Figure 3.1.

Circuit 1.

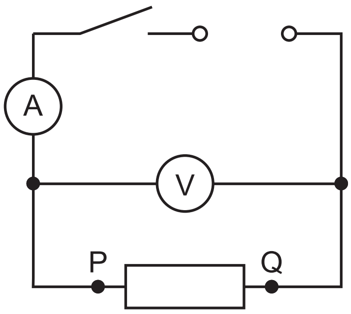

Figure 3.1

Circuit 1 contains one resistor of resistance X Ω.

Using circuit 1:

- Close the switch.
- Record in Table 3.1, the potential difference (p.d.) V across the resistor.
- Record in Table 3.1, the current I in the circuit.
- Open the switch.

Complete the table headings in Table 3.1 by inserting the missing units.

Table 3.1

circuit	V / …	I / …	R / Ω
1			
2			
4			

[1]

DO NOT WRITE IN THIS MARGIN

(ii) Disconnect the single resistor from P and Q.

Connect the resistor network Y to P and Q to form circuit 2.

Figure 3.2 shows the completed circuit 2.

Circuit 2.

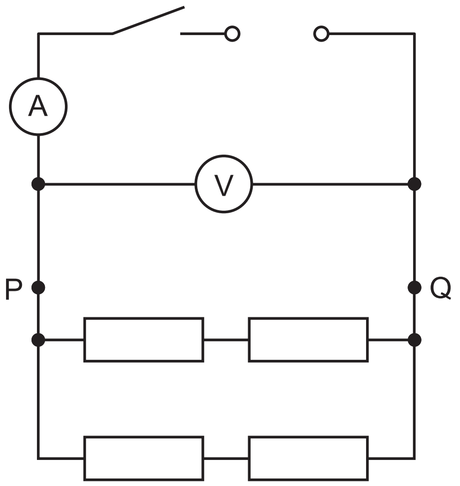

Figure 3.2

Circuit 2 contains four identical resistors each of resistance X Ω.

Using circuit 2:

- Close the switch.
- Measure, and record in Table 3.1, the potential difference (p.d.) V across the combination of 4 resistors.
- Measure, and record in Table 3.1, the current I in the circuit.
- Open the switch.

[1]

(iii) Calculate, and record in Table 3.1, the resistance R of circuits 1 and 2.

Use your readings from Table 3.1 and the equation shown.

$$R = \frac{V}{I}$$

[2]

(iv) Theory states that the resistance of circuit 1 and circuit 2 are the same.

State whether your results support this statement. Justify your statement by reference to values from your results.

statement ....

justification ....

....
[2]

(v) Figure 3.3 shows circuit 3. Do **not** build circuit 3.

Circuit 3.

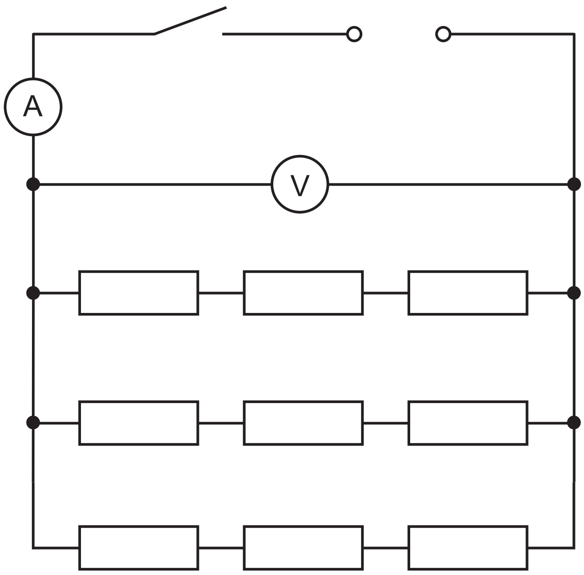

Figure 3.3

Circuit 3 has **not** been set up for you.

Circuit 3 contains nine identical resistors each of resistance X Ω.

Predict the resistance of this combination of resistors.

.... Ω [1]

(b) **(i)** Disconnect the resistor network Y from P and Q.

Connect the resistor network Z to P and Q to form circuit 4.

Complete Figure 3.4 to show circuit 4.

Circuit 4.

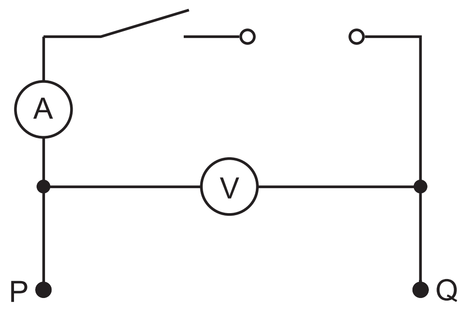

Figure 3.4

[2]

(ii)
- Close the switch.
- Measure, and record in Table 3.1, the potential difference (p.d.) V on the voltmeter.
- Measure, and record in Table 3.1, the current I in the circuit.
- Open the switch.

[1]

(c) Suggest why the switch is opened after readings are taken.

....

.... [1]

[Total: 11]

4 A student investigates the rate of cooling of hot water in a container which has a lid.

Plan an experiment which enables the student to investigate the effect of different starting temperatures on the rate of cooling.

The apparatus available includes:

- a beaker
- a measuring cylinder
- a supply of hot water
- a lid

You are **not** required to do this investigation.

In your plan:

- state any additional apparatus required
- explain briefly how to do the investigation
- state the key variables to keep constant
- draw a table, or tables, with column headings, to show how to display your readings (you are **not** required to enter any readings in the table)
- explain how to use your readings to reach a conclusion.

[7]

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