

THE SUCCESS PATH EXAMINATION COUNCIL (SPEC)

Paving the Way to Success

232/3 PHYSICS (Practical)

PRE-MOCK EXAMINATIONS 2026

MARCH 2026

Time: 2½ hours



Paper 3

232/3
4992104

Name Admission Number

School Class

Candidate's Signature Date

Instructions to candidates

- (a) Write your name and admission number in the spaces provided above.
- (b) Sign and write the date of examination in the spaces provided above.
- (c) Answer ALL questions in the spaces provided in the question paper.
- (d) You are supposed to spend the first 15 minutes of the 2 ½ hours allowed for this paper reading the whole paper carefully before commencing your work.
- (e) Marks are given for a clear record of the observations actually made, their suitability, accuracy and the use made of them.
- (f) Candidates are advised to record their observations as soon as they are made.
- (g) Non-programmable silent electronic calculators and KNEC mathematical tables may be used except where stated otherwise.
- (h) This paper consists of 8 printed pages.
- (i) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

For Examiner's Use Only

Question 1	c	d	g	h	i	(j)	(k)			TOTAL
Maximum Score	1	1	8	5	2	2	1			20
Candidate's Score										
Question 2		c	e	f	g	h	i	j	k	TOTAL
Maximum Score		1	6			5	3	3	2	20
Candidate's Score										40

GRAND TOTAL

4992104

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232/3



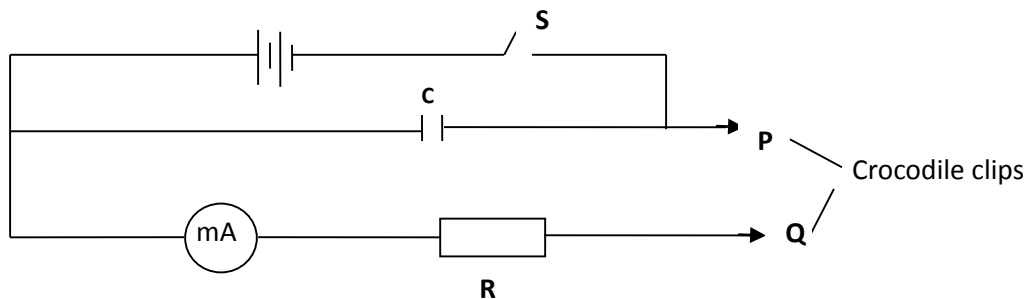
Question one

You are provided with the following:

- 2 new dry cells size D
- A cell holder
- A switch
- A milliammeter of range 0 to 1 mA
- A capacitor labeled C
- 8 connecting wires; at least four with crocodile clips on one end
- A stopwatch
- A carbon resistor labeled R

Proceed as follows

- (a) Connect the circuit as shown in the **figure 1** below, where **P** and **Q** are crocodile clips.



- (b) Close the switch **S**
- (c) Name the process which takes place when the switch **S** is closed

..... (1 mark)

- (d) Connect the crocodile clips **P** and **Q**. Observe and record the highest reading of the millimeter **I₀**

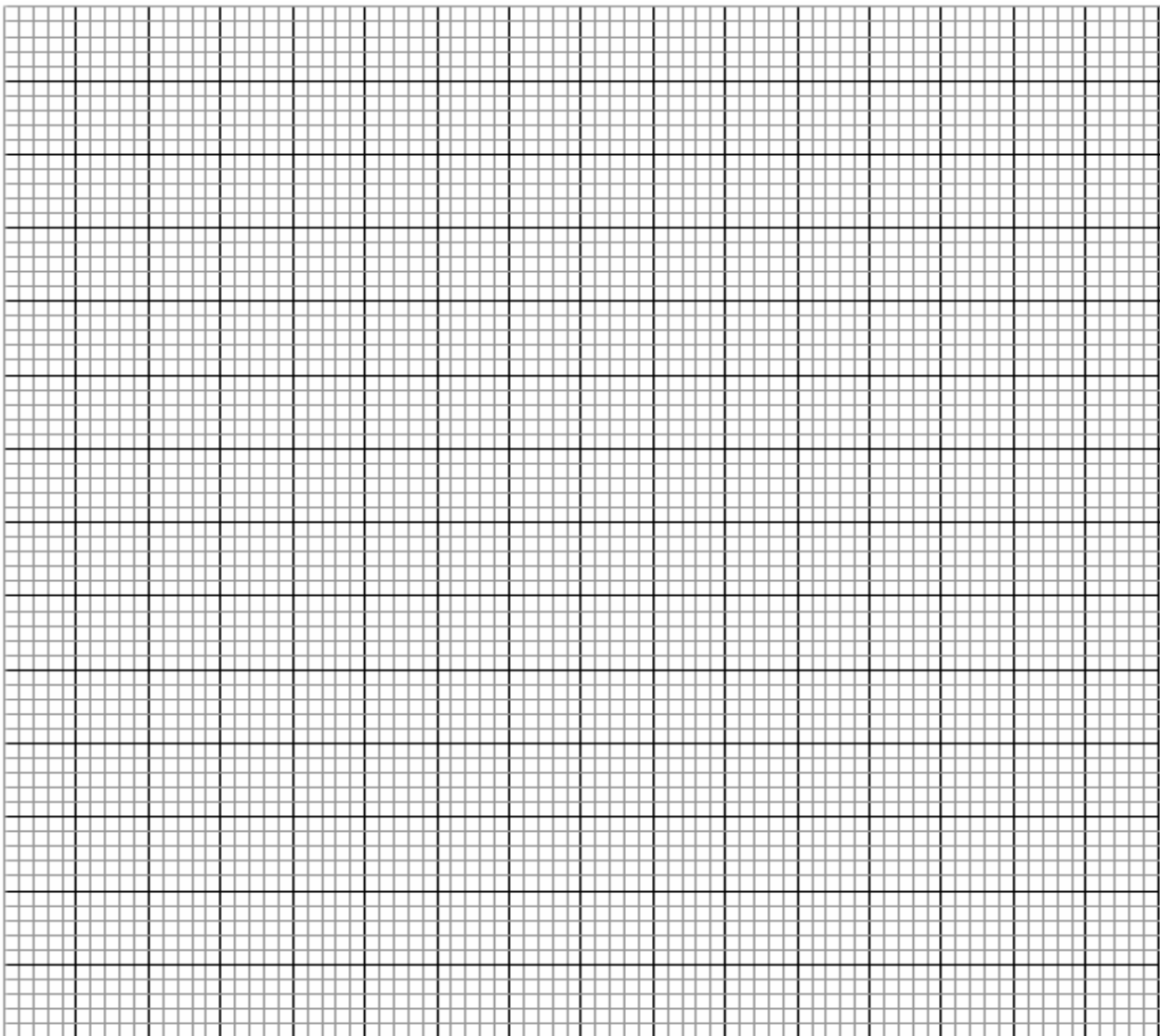
I₀ = mA (1 mark)

- (e) Open the switch **S** and at the same time start the stopwatch to measure the time taken for the current to decrease to **four fifth** the value of **I₀** i.e. $\frac{4}{5} I_0$. Record your value in the **table 1**.
- (f) Close the switch **S** for a second time and observe the deflection in the millimeter. (*the pointer should rise back to the same initial value I₀*)

(g) Repeat part (b) for other values of current as shown in the **table 1** below. (8 marks)

Current I (mA)	$\frac{4}{5} I_0$	$\frac{3}{4} I_0$	$\frac{2}{3} I_0$	$\frac{1}{2} I_0$	$\frac{2}{5} I_0$	$\frac{1}{3} I_0$	$\frac{1}{4} I_0$
Your calculated fraction of I ₀ (mA)							
Time t (s)							

(h) Plot a graph of Current **I** (y – axis)(mA) against time **t** (s) (5 marks)



(i) From your graph, find **W** the value of **I** when **t = 10s**. (2 marks)

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(j) Given that **A = 10W**, determine the value of **A**. (2 marks)

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(k) Determine the voltage across **R** at **t = 10s** given that $R = 4.7k\Omega$ (1 mark)

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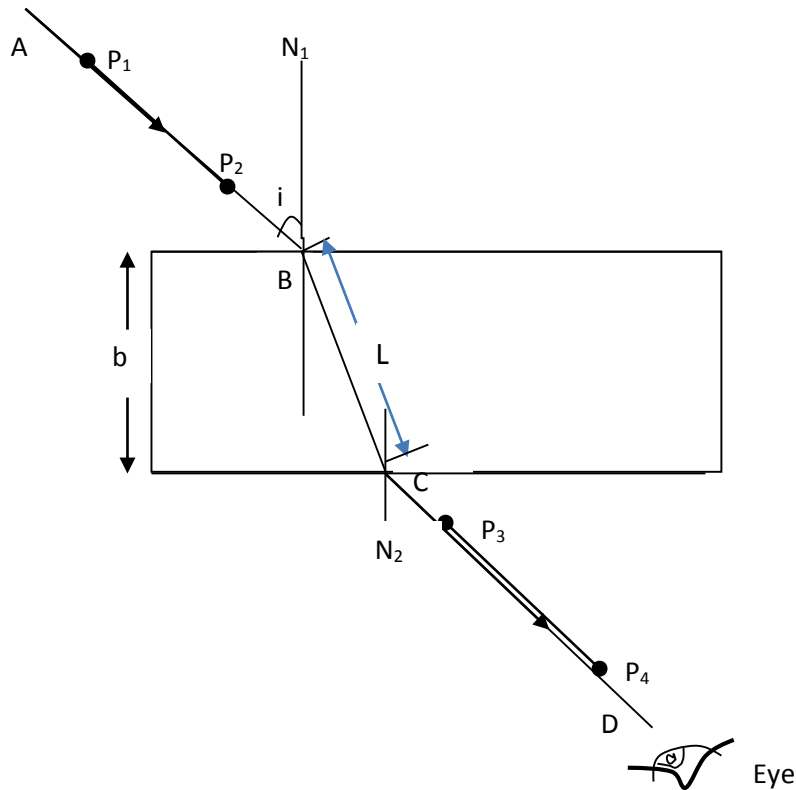
Question Two

You are provided with the following;

- a rectangular glass block
- 4 optical pins
- 2 thumb pins
- a soft board
- a plain paper

Proceed as follows:

- (a) Place the glass block on the plain paper with one of the largest face upper most (**on page 6**). Trace round the glass block using a pencil as shown below.



- (b) Remove the glass block and construct a normal at B. Construct an incident ray AB of angle of incidence, $i = 20^\circ$.
- (c) Measure the breadth **b** of the glass block breadth **b** = (1 mark)
- (d) Replace the glass block and trace the ray ABCD using the optical pins.
- (e) Remove the glass block and draw the path of the ray ABCD using a pencil.



- (e) Measure the length L and record it in the table below

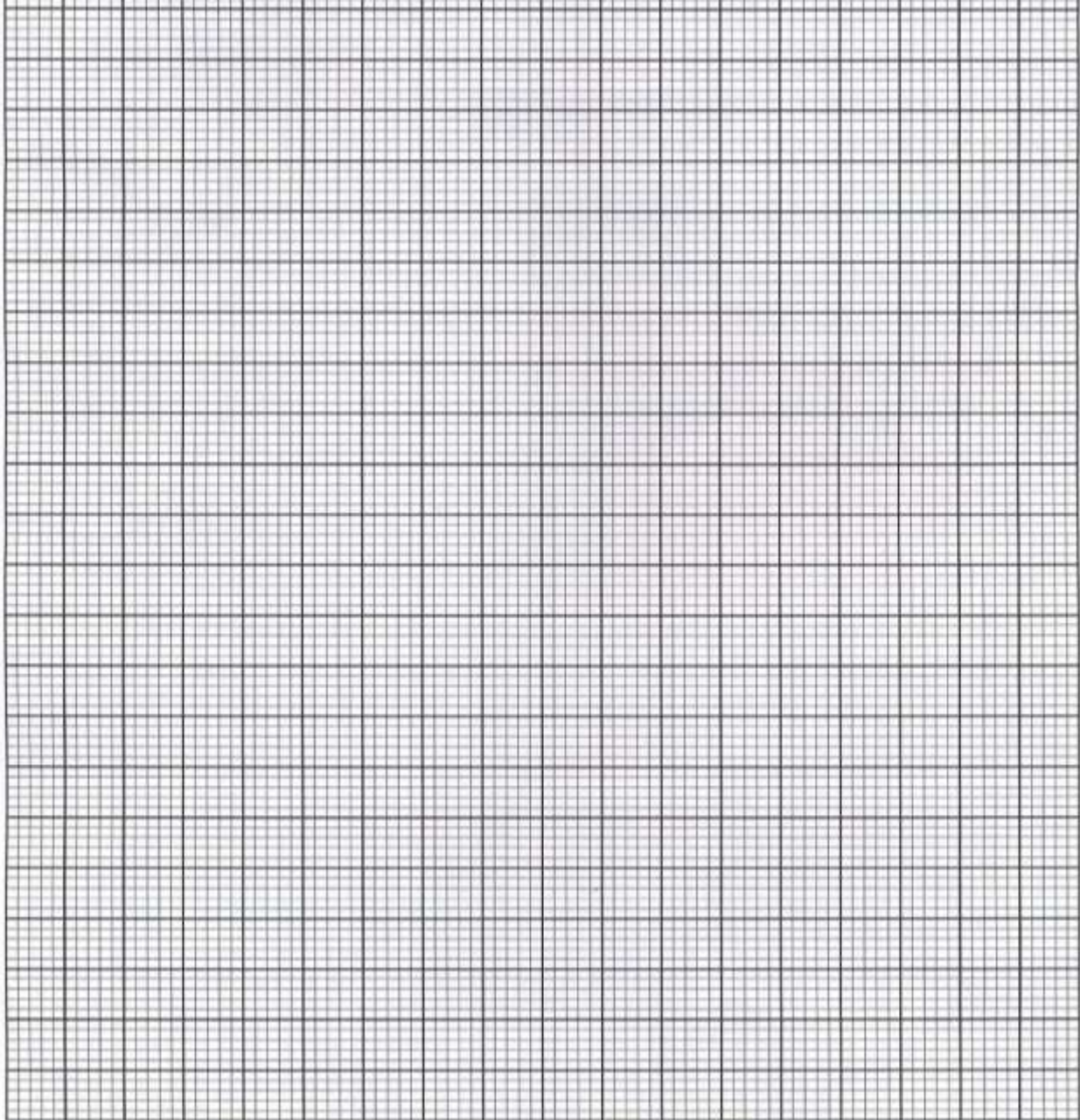
Angle i°	L (cm)	L^2 (cm) ²	$\frac{1}{L^2}$ (cm ⁻²)	$\text{Sin}^2 i$
20				0.1170
30				0.25
40				0.4312
50				0.5868
60				0.75
70				0.8830

(6 marks)

- (f) Repeat the procedure above for the angles of incidence given.
- (g) Calculate the values of $\frac{1}{L^2}$ and record in the table above.



- (h) Plot a graph of $\frac{1}{l^2}$ (y-axis) against $\sin^2 i$. (5 marks)



- (i) Calculate the gradient **S** of the graph. (3 marks)

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(j) Determine the value of n . Given that the equation of that graph is; $\frac{1}{L^2} = - \left(\frac{1}{n^2 b^2} \right) \sin^2 i + \frac{1}{b^2}$ (3 marks)

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(k) Present your work sheet; attached to the exam paper (2 marks)

