MOI HIGH SCHOOL
KABARAK

FORM 3 2026 END TERM 3 EXAMS

Paving Way For Kenya Certificate of Secondary Education Success

Name …….. Admission no…….

Candidate's Signature…… Date…….

PHYSICS

PAPER 3

TIME: 2Hours

INSTRUCTIONS TO CANDIDATES

- Answer all questions in both sections in the spaces provided in the question paper.
- Read the whole paper carefully before commencing your work.
- Marks are given for clear record of the observations actually made, their suitability and accuracy and the use of them.

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1.	20	
2.	20	
TOTAL	**40**	

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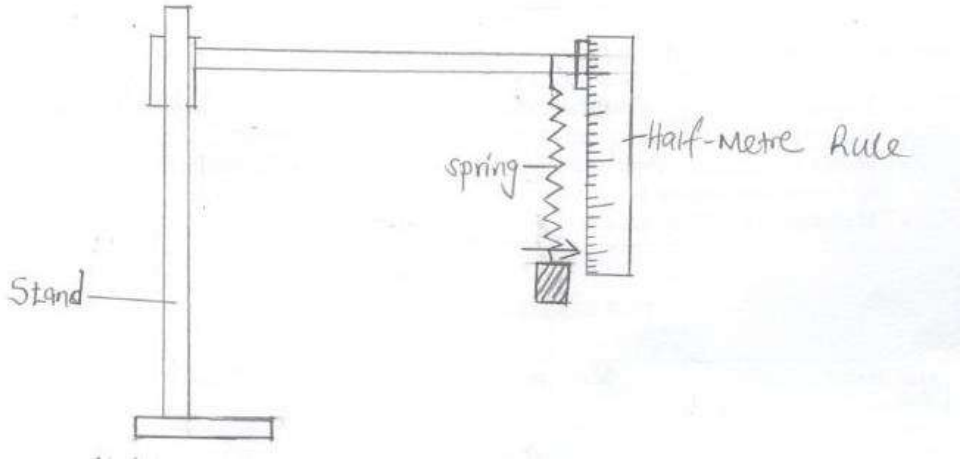
Question 1

You are provided with the following;

- Masses; 10g, 20g(2), 50g and 100g
- A helical spring with a pointer
- Metre rule or half metre rule

Proceeds as follows;

1. a) Suspend the helical spring vertically, alongside the clamped half metre rule as shown in figure 1 below. Determine the length, L_0 of the spring before loading it.
   L_0=_____(cm) **(1mk)**



   b) i) Load the spring with a mass of 20g and determine the new reading on the metre rule (L).

   ii) Record this in the table below.

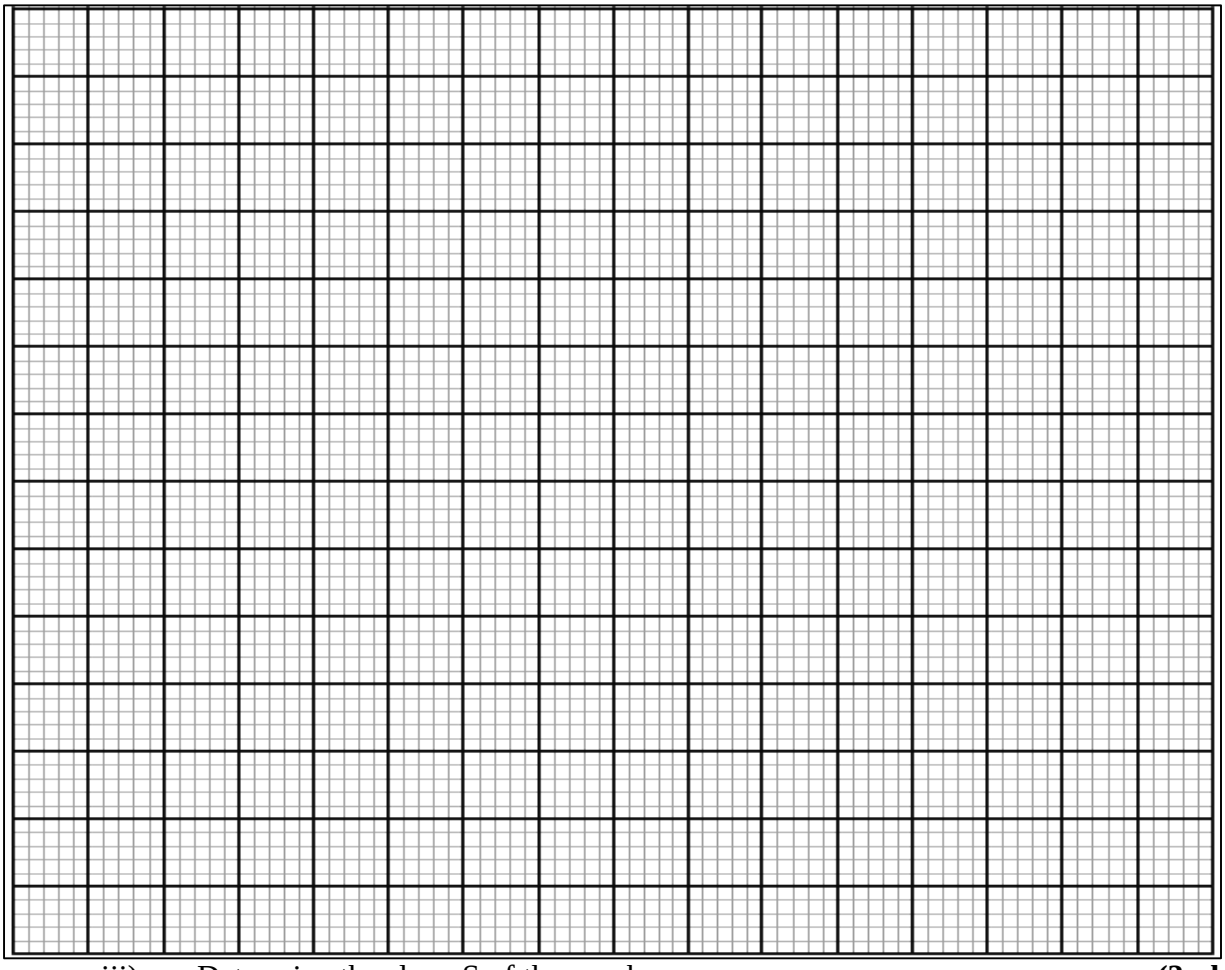
   iii) Calculate the extension, e= L-L_0 due to the mass of 20g and record the value in the table given below.

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i) Repeat step b(i-iii) for other masses and complete the table. **(8mks)**

Mass (g)	0	20	30	40	50	60	70	80	90	100
Weight (N) (Force)										
Reading L (cm)										
Extension e (cm)										

ii) Plot a graph of Force(N) against extension e (cm). **(5mks)**



iii) Determine the slope S of the graph. **(3mks)**

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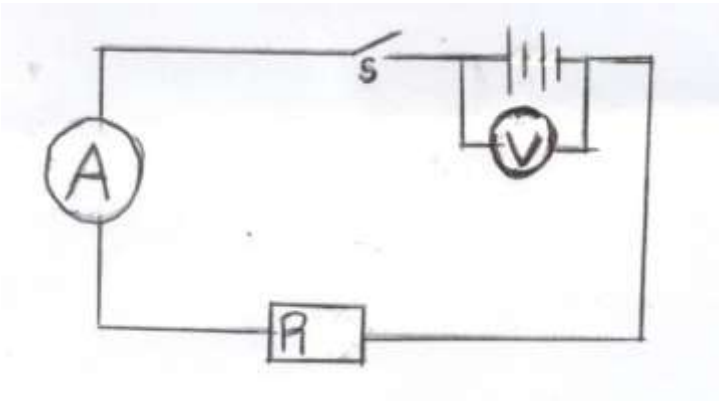
iv) Given that K=Se, determine the value of K where S is the slope of the graph and e is the extension of the spring when loaded with a 50g mass. **(3mks)**

Question 2

You are provided with the following;

- A Nichrome wire mounted on a millimeter scale YZ.
- A carbon resistor R (10Ω)
- 8 connecting wires
- Ammeter
- Voltmeter
- 2 dry cells
- Cell holders
- Switch

2. (a) Set up the circuit as shown below.



i) Record the voltmeter reading when the switch is open.

E=_____ **(1mk)**

ii) Close the switch and record the voltmeter and ammeter readings.

Voltmeter reading, V=_____ **(1mk)**

Ammeter reading, I=_____ **(1mk)**

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iii) Explain why V is less than E. **(2mk)**

_____

_____

_____

iv) Now connect the voltmeter across the carbon resistor R and record voltmeter reading V_1 when the switch is on. **(1mk)**

V_1=

v) Determine R given that; R= $\frac{V_1}{I}$ **(3mks)**

(b)

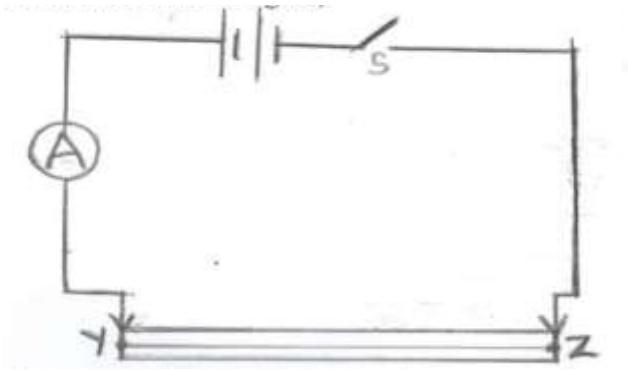
(i) Measure and record the diameter, d of the resistance wire (YZ) using a micrometer screw gauge.

d= _____mm

d=_____m **(2mks)**

ii) Set-up the circuit as shown in figure;

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iii) Determine the current I flowing in the circuit.

I=_____ **(1mk)**

iv) Now connect the voltmeter across wire (YZ) and record the p.d, V_2 across wire YZ.

V_2= _____ **(1mk)**

v) Determine the resistance R of the wire YZ. **(3mks)**

vi) Determine k, the resistance per metre of wire YZ. **(2mks)**

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vii) Determine Q given that $Q=\frac{\pi k d^2}{4}$ (where d is in metres) **(2mks)**

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