

PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
JOIN THE REVOLUTION PROGRAM
FORM FOUR PRE-NATIONAL I EXAMINATION

031 / 2A PHYSICS ACTUAL PRACTICAL 2A

TIME: 3 HOURS

Year, 2023

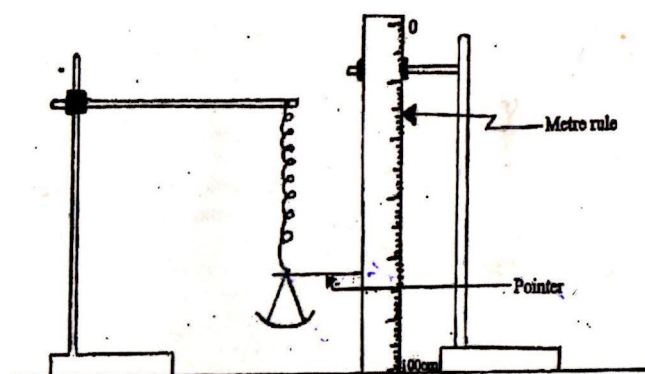
Instructions

1. This paper consists of total of **two (2)** questions
2. Answer **all** questions
3. Marks for each question thereof indicated
4. Non-programmable calculators may be used
5. Cellular phones are **not** allowed in the examination room
6. Write your **examination number** on every page of your answer booklets
7. The following constants may be used
Acceleration due to gravity, $g = 10\text{m/s}^2$ or 10N/kg
Pie $\pi = 3.14$

SCHOOLS PERFORMED

Viwege	Nyakaliro	Busangi	Miyomboni	Al-azhary
Kirima	Elon	Ikizu	Mpunze	Urafiki
Lekule	Themi	Tchenzema	Tarakea	Nkasi
Sarwatt	Idetemya	Mwamagigisi	Kikala	Koromije
Dr.Asha Rose Migiro	Ororimo Islamic School	St.John Paul	Anna Magowa	

1. The aim of this experiment in figure below is to verify Hooke's using a spring
Proceed as follows

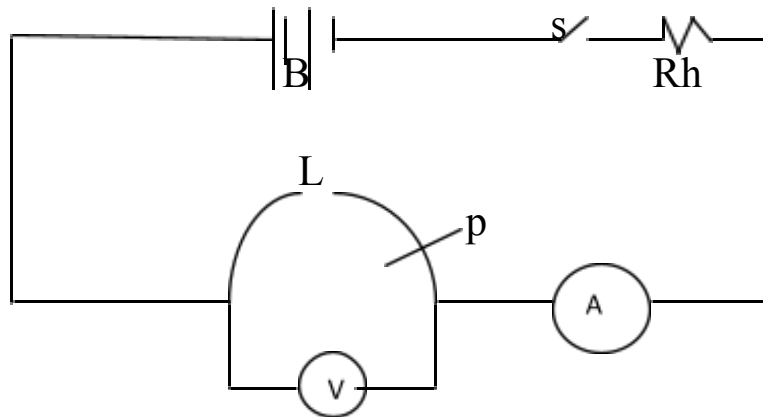


- i. Set up the apparatus as shown in the figure above
- ii. Record the length L_0 indicated by the pointer without mass on the spring
- iii. Place a 50g mass on the spring and record the new length L
- iv. Repeat this procedure for $m = 100\text{g}, 150\text{g}, 200\text{g}$ and 250g each time measure the responding length (L)
- v. Tabulate your results as follows
Initial length $L_0 = \underline{\hspace{2cm}}$ (1mark)

Mass (g)	Force (N)	Length (cm)	Extension $e = (L - L_0)\text{cm}$
100			
150			
200			
250			
300			

- i. Complete the table
- ii. Plot a graph of force (N) against extension e (cm) (7marks)
- iii. What are the values of intercepts? (2marks)
- iv. Determine the slope of the graph (3marks)
- v. What is the physical meaning of the slope (2marks)
- vi. What are the possible source of errors (2marks)
- vii. State the law which governed the experiment (3 marks)

2. The aim of the experiment is to determine the resistivity of an electrical conductor P



- With P having a length of 50cm, connect up the circuit as shown above, close the key and adjust Rheostat Rh so that the current in Ammeter is 0.2A. record the current I and potential difference between its ends
- Repeat the procedure with correct I = 0.30A, 0.40A, 0.50A and 0.60A.
- Record your results in table below

Current (I)						
P.d (v)						

- Plot a graph of V against I and calculate slope G
- Deduce resistivity of the conductor of the wire P given that

$$\text{Resistivity} = \frac{G\pi d^2}{4c} \quad \text{where, } d = \text{diameter of wire P and } c \text{ is the length of the wire P}$$